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LONDON SCHOOL OF HYGIENE
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CONTENTS.

VOL. XXXV.—YEAR 1872.

March, 1872.

	PAGE
Comparative Health of Seamen and Soldiers, as shown by the Naval and Military Statistical Reports. By T. GRAHAM BALFOUR, M.D., F.R.S., Deputy Inspector-General of Hospitals, one of the Vice-Presidents of the Society	1—24
On the Limits of Legislative Interference with the Sale of Fermented Liquors. By PROFESSOR LEONE LEVI, F.S.A., F.S.S., &c., &c.	25—56
On Prison Discipline and Statistics in Lower Bengal. By FREDERIC JOHN MOUAT, M.D., F.R.C.S., Deputy Inspector-General of Hospitals, Her Majesty's Indian Army; late Inspector-General of Prisons, Lower Bengal; Official Visitor of Lunatic Asylums, and Justice of the Peace for Calcutta, &c., &c.	57—106
On the Colonies. By ARCHIBALD HAMILTON	107—126
Miscellanea :—General Results of the Commercial and Financial History of 1871.—The Book Publishing Trade in Great Britain in 1871.—Recruits and Deserters.—The County Courts.—Shipbuilding in the United Kingdom	127—150
Periodical Returns, October, November, December, 1871.....	151—170

June, 1872.

The Bank Act and the Crisis of 1866. By HAMMOND CHUBB, Esq., B.A.	171—195
--	---------

The Official Trade and Navigation Statistics. By STEPHEN BOURNE, Esq., Assistant Principal of the Statistical Department of Her Majesty's Customs.....	196—217
Tonnage Statistics of the Decade 1860-70. By JOHN GLOVER, Esq.	218—230
Miscellanea:—The Rise in Prices.—Women's Wages in the United States.—Synopsis of the International Congress, with Names of Delegates.—The Consumption of Tea	231—244
Periodical Returns, January, February, March, 1872.....	245—264
<i>September, 1872.</i>	
Report of the Council, presented at the Thirty-Eighth Anniversary Meeting of the Statistical Society, held 20th June, 1872; with the Proceedings of that Meeting	265—271
Statistics of Telegraphy. By SIR JAMES ANDERSON	272—326
Some Statistics relating to the Traffic through the Suez Canal; to Merchant Vessels touching at St. Helena; and to Losses Posted on "Lloyd's Loss Book." By HENRY JEULA, Member of Lloyd's, F.R.G.S., F.S.S.	327—333
On the Consumption of Tobacco in the United Kingdom, 1801-70. By WILLIAM E. A. AXON, M.R.S.L., F.S.S.	334—340
Summary of Statistics of the Russian Empire. By ROBERT MICHELL, Esq., of the Foreign Department, India Office, Fellow of the Royal Geographical Society, Fellow of the Imperial Russian Geographical Society	341—372
House Accommodation for Learned Societies	373—375
Miscellanea:—The Coinage of Gold for Twenty-Four Years.—Crime in London, 1869-71.—Emigration from British Ports. Work and Wages in Canada	376—388
Periodical Returns, April, May, June, 1872.....	389—416

December, 1872.

	PAGE
Inaugural Address delivered at the Society's Rooms, 12, St. James's Square, London, on Tuesday, 19th November, 1872. By the PRESIDENT, WILLIAM FARR, Esq., M.D., D.C.L., F.R.S.	417—430
Report on the Eighth International Statistical Congress, held at St. Petersburg, $\frac{22^{\text{nd}}}{10^{\text{th}}}$ August to $\frac{29^{\text{th}}}{17^{\text{th}}}$ August, 1872. By SAMUEL BROWN, F.S.S.	431—457
Statistical Critique on the Operation of the Bank Charter Act of 1844, and Suggestions for an Improved System of Issue. By ERNEST SEYD	458—540
Miscellanea:—The Pedigree of the United States.—Pawn-brokers.—Military Expenditure on the Colonies.—Cotton Blooming	541—545
Periodical Returns, July, August, September, 1872	546—564
INDEX to vol. xxxv (1872)	565—582

JOURNAL OF THE STATISTICAL SOCIETY,

MARCH, 1872.

COMPARATIVE HEALTH of SEAMEN and SOLDIERS, as shown by the
NAVAL and MILITARY STATISTICAL REPORTS. By T. GRAHAM
BALFOUR, M.D., F.R.S., Deputy Inspector-General of Hospitals,
one of the Vice-Presidents of the Society.

[Read before the Statistical Society, 19th December, 1871.]

CONTENTS:

	PAGE		PAGE
I.—Introduction	1	III.—Mediterranean Station	10
II.—Home Station	3	APPENDIX	21

I.—Introduction.

UPWARDS of thirty years have elapsed since a paper on the comparative sickness, mortality, and prevailing diseases among seamen and soldiers serving in the Mediterranean was read to this Society by the late Sir A. M. Tulloch.* During that period great and important changes have been made in the organisation of both services and in the conditions upon which the sanitary state of the men in a great measure depends. In the army, enlistment for life has been replaced by engagement for a limited period, renewable, under certain conditions, for such additional time as would make up a total service of twenty-one or twenty-four years in the different arms; after which the soldier is entitled to retire on a pension for life. The barrack accommodation has been improved by apportioning the space, cubic and superficial, more in accordance with the laws of sanitary science, and by careful attention to ventilation; alterations in the form, fit, and texture of the clothing have been introduced; the dietary has been regulated with more attention to the requirements of climate, and with greater variety in the means of cooking; the opportunity of obtaining wholesome food and drink, without being exposed to the temptations of the beer shop and public house, has been afforded to the soldier by the establishment of regimental canteens, and increased facilities for ablution have

* *Journal of the Statistical Society*, vol. iv, p. 1.

been provided. The education of the soldier has not been neglected, every facility being now afforded him of obtaining instruction under experienced trained schoolmasters, and the opportunity of physical recreation being provided by means of gymnasia, ball courts, cricket grounds, &c. Libraries and reading rooms furnish him with occupation for his leisure time, and to some extent provision has been made to enable him to acquire a trade or to turn to account one acquired previously to enlistment. In addition to these advantages he has received an increase to his pay, which, however, there is too good reason to fear is not always expended in a manner conducive to health.

During the same period changes of equal importance have been made in the condition of the seamen in the royal navy. Formerly, when ships were put into commission at the different ports, their crews were gradually completed in a very slow manner by volunteers, many of whom were merchant seamen, and not a few landmen; they were engaged only for the time the vessel remained in commission, usually from three to four years, when they were paid off and received the great bulk of their pay on discharge. Leave of absence was seldom granted to seamen serving abroad, and when granted it was the custom to allow a very large number to go ashore usually for two days at a time; the result was, that during these short periods of leave, and still more when paid off on returning to England with considerable sums in their possession, the men indulged in every kind of excess, to the serious deterioration of their constitutions. Now, seamen are enlisted for a period of ten years' continuous service; they are recruited almost entirely from boys, carefully selected and subsequently trained for thirteen months in special training ships at the home ports, from which they are drafted at the average age of $15\frac{1}{2}$ or 16, and are bound to serve ten years continuously after they have been rated seamen; ships are thus provided with complete crews of trained seamen and boys immediately they are placed in commission. At the termination of a ship's commission, leave of absence, proportionate to the time served in the ship, is granted to the seamen, with full pay, at the expiration of which they join the dépôts, where they remain till required for further service. Wages are now paid monthly, and leave of absence is constantly granted to men of good character. The seamen enjoy themselves on shore in a rational manner, and return to their ships at the expiration of their leave. As a result of these improvements, drunkenness, formerly the besetting sin of seamen on shore, has been greatly reduced, and the man-of-war's-man of the present day is, as a general rule, sober, steady, and well-conducted; and, from the system of recruiting and training boys, education and intelligence are steadily increasing in the service.

The increased size of the modern ships affords considerably more cubic space per man; the additional height between decks enables the hammocks to be suspended at a greater distance than formerly from the deck to which they are swung, removing the men to some extent from the heated and vitiated air resulting from so large a number of men sleeping in close proximity; great attention is paid to ventilation, and abundant facilities for ablution by means of washing places and baths, are now provided.

It may be interesting to the Society to have the important question of the health of our sailors and soldiers again brought under its consideration, and especially with a view to examine what has been the practical result of these important changes, and whether they have proved equally advantageous in the two services. The means of making this inquiry are furnished by the annual reports on the health of the navy and army which have for some years been presented to Parliament. It will be convenient to confine it to the ten years from 1859 to 1868 inclusive, the date of the last volume published on the health of the navy. Unfortunately different classifications of diseases were in use in the two services during that period, and there has consequently been some difficulty experienced and a considerable amount of labour involved in preparing the necessary tables of diseases.* This has been done with as much care as possible, and although perhaps in some of the minor details not strictly accurate, they approximate sufficiently to justify a comparison of the results. The classification in use in the army has been adopted, but with some modifications which were deemed necessary to bring the diseases of the two services into more accurate comparison.

In the paper by Sir A. M. Tulloch it was found necessary to confine the inquiry to the naval and military forces serving in the Mediterranean, but as the late volumes furnish the requisite information respecting the navy on the Home Station, it may be interesting first to compare the sickness and mortality in it with those of the infantry regiments serving in the United Kingdom, and then to extend the inquiry to the Mediterranean Command.

II.—*Home Station.*

The average annual strength of the naval force employed on the Home Station during the ten years 1859-68, did not differ materially from that of the infantry regiments serving in the United Kingdom during the same period, the former having been 21,464, and the

* Since this was written, the "Statistical Report on the Health of the Navy for 1869" has been published. It is a great satisfaction to be able to state that the difficulty arising from the use of different classifications no longer exists, both services having adopted in their Reports for 1869 the nomenclature and classification prepared by the Royal College of Physicians.

latter 23,386. Table A (Appendix), p. 21, shows the sickness, mortality, invaliding, and mean daily sick in each year of the decade, and the average of the whole period for each of the services.

This table shows the sickness in the navy, as measured by the admissions into hospital, to have been one-fifth, and by the proportion constantly sick 1·20 per 1,000 of the strength higher than in the army, and the deaths from all causes to have been ·48 per 1,000 higher, but the invaliding to have been about 1 per 1,000 lower.

In the paper already referred to, it was shown that the sailors are much more exposed by the nature of their duties to accidental injuries and to deaths from violence, frequently involving, as in the loss of a ship, or the upsetting of a boat, considerable numbers of men. It becomes necessary, therefore, to deduct all cases of this kind from the returns of both services before bringing into comparison the relative health of the men. This has accordingly been done in the following table:—

	Naval Force.			Infantry Regiments.		
Aggregate strength	214,640			233,858		
	Admitted into Hospital.	Died.	Discharged as Invalids.	Admitted into Hospital.	Died.	Discharged as Invalids.
Total, as in Table A.....	222,541	1,810	5,855	194,048	1,860	6,106
Deduct those from wounds and injuries.... }	39,759	447	442	16,057	212	215
Total from diseases ...	182,782	1,363	5,413	177,991	1,648	5,891
Annual ratio per 1,000 of mean strength..... }	852·	6·35	25·22	761·	7·05	27·50

From this it appears that the admissions into hospital for diseases, exclusive of accidents and injuries, have been one-ninth higher among the sailors, but that the deaths have been ·70, and the invaliding on account of disease, 2·28 per 1,000 of the strength higher among the soldiers. The difference in the rate of mortality may probably be to a great extent accounted for by the difference of age in the two services, the proportion of boys—at that age when mortality is at its minimum,—being 10 per cent. of the force in the navy, and a little above 3 per cent. in the infantry.

There are no means of making a perfectly accurate comparison of these results with those of a former period, as at that time ships on the Home Station were grouped into two classes, the “Home” and the “Various,” the results of the former being rather more

favourable than of the latter, while the only data relating to troops of the line at home for that period refer to the cavalry, among whom the admissions and deaths are generally lower than in the infantry. But a comparison of the preceding results, even with these more favoured bodies of men, shows a very satisfactory reduction in both sickness and mortality.

	Naval Force.		Military Force.	
	Exclusive of Wounds and Injuries. Ratio per 1,000 of Mean Strength			
	Admitted into Hospital.	Died.	Admitted into Hospital.	Died.
1830-36*	983	8·8	803	13·7
'59-68	852	6·35	761	7·05
Difference	131	2·45	42	6·65

* See "British and Foreign Medical Quarterly Review" for April, 1844, p. 313.

This table shows a marked reduction in the admissions and deaths in the naval force, and a smaller reduction in the admissions, but much larger one in the deaths in the army. Indeed the mortality in the latter has been little more, and, if the comparison could have been made with infantry instead of cavalry for the first period, it would probably have been less than half the previous ratio. It will be observed, that while the mortality in the army was one-half higher than in the navy during the seven years 1830-36, it was very little above it during the last ten years; not more, indeed, than might be accounted for by the difference of age in the two services.

The influence of the different classes of diseases in causing sickness and mortality in the navy and army respectively, is shown in the Appendix, Table B, p. 22.

MIASMATIC DISEASES were more prevalent and more fatal in the navy than in the army, but the invaliding was slightly higher in the latter. As this class, however, includes many maladies differing greatly from each other, the following table of the principal diseases comprised in it is submitted, with a view to trace more closely the affections in which the difference is most manifest.

Aggregate strength	Naval Force.				Infantry Regiments.			
	214,640.				233,858.			
	Admitted.	Died.	Ratio per 1,000.		Admitted.	Died.	Ratio per 1,000.	
			Admitted.	Died.			Admitted.	Died.
Eruptive fevers	1,593	50	7.4	.23	635	21	3.7	.09
Intermittent fever	1,677	2	7.8	.01	1,229	4	5.2	.02
Remittent and con- } tinued fevers	2,970	119	13.8	.55	4,481	118	19.2	.50
Dysentery and diarrhoea	7,463	17	34.8	.08	2,995	14	12.8	.06
Cholera	37	9	0.2	.04	9	7	0.4	.03
Sore throat	9,436	6	44.0	.03	5,932	4	25.4	.02
Ophthalmia	2,604	—	12.1	—	5,478	—	23.4	—
Erysipelas	702	18	3.3	.08	453	20	1.9	.08
Rheumatism	13,278	8	61.9	.04	5,300	8	22.7	.03

Eruptive fevers were twice as prevalent in the naval force as in the infantry, a difference probably due to the much larger proportion in the former of boys at that period of life when eruptive fevers are more common, and to the difficulty of enforcing on board ship that separation of the cases from the healthy which is so essential to prevent the spread of these affections. Measles were very rife in the naval force in 1860 and 1867; scarlet fever in 1861 and 1863, and also, though to a less extent, in 1866, and small pox in 1864 and in 1860. In the latter year the disease was of a very fatal character, the deaths having been 1 in 7 cases, or 14.3 per cent.; in 1864 they were in the proportion of only 1 in 22, or about $4\frac{1}{2}$ per cent.

Intermittent fever was slightly more prevalent in the navy, but in neither service was it a source of much inefficiency.

Remittent and continued fevers were nearly one-half more prevalent in the infantry than among the seamen, but the excess was probably in slight cases of fever, as the mortality in the two services was identical.

Dysentery and diarrhoea were nearly thrice as prevalent in the navy as the army, a result probably of the difference in the diet, and perhaps also of the greater exposure of the sailors to wet and cold, but the difference in the mortality was very slight.

Sore throat and rheumatism were much more prevalent in the navy, particularly the latter, the admissions by which were nearly thrice as high as in the army. The difference was probably the result of the relative exposure of the men when on duty to wet and cold, and to the damp atmosphere by which they are continually surrounded. *Erysipelas* was also more prevalent, but not more

fatal than in the army; the excess may probably be due to the difficulty of obtaining adequate ventilation on board ship. In *ophthalmia* the sailors enjoy an exemption, the admissions having amounted to only one-half the proportion among the soldiers.

VENEREAL DISEASES.—Owing to the grouping of diseases adopted in the naval report, it has been found necessary to restrict the diseases classed under this head to syphilis, primary and secondary, gonorrhœa, and stricture of the urethra. The relative prevalence of these in the two services has been as follows :—

	Naval Force.				Infantry Regiments.			
	Admitted.	Died.	Ratio per 1,000.		Admitted.	Died.	Ratio per 1,000.	
			Admitted.	Died.			Admitted.	Died.
Syphilis	16,920	3	78·8	·01	30,594	17	130·8	·07
Gonorrhœa	6,048	—	28·2	—	25,635	—	109·6	—
Stricture of urethra	717	6	3·4	·03	578	4	2·5	·02

This table shows a much lower ratio of admissions into hospital from syphilis and gonorrhœa among the sailors than the soldiers, probably because they have fewer opportunities of contracting them, and also because slight cases of gonorrhœa are, it is understood, treated on board ship without the men being taken off duty. The latter view seems to be supported by the circumstance that in the navy the cases of gonorrhœa are in the proportion of 1 to $2\frac{3}{4}$ of syphilis, while in the army they are in the proportion of 5 to 6, and also by the proportion of cases of stricture being somewhat higher in the navy. This comparative exemption of the sailor from syphilis and gonorrhœa was found to exist during the period comprised in the earlier reports, 1830-36, when the admissions by all venereal diseases in the two services respectively, were 133 and 181 per 1,000 of the strength.

PARASITIC and DIATHETIC DISEASES seem to require little remark, the difference of their prevalence in the two services being very trifling. It may be noticed, however, that in the naval service a number of cases of gout appear in the returns, and scarcely any in the army, a difference arising from the diseases of the officers being included with those of the men in the former and not in the latter.

TUBERCULAR DISEASES.—From this important and very fatal class of diseases, the navy enjoys a marked exemption over the army. Dividing the diseases into two groups, the results in each service have been as follows :—

	Naval Force.				Infantry Regiments.			
	Admitted.	Died.	Ratio per 1,000.		Admitted.	Died.	Ratio per 1,000.	
			Admitted.	Died.			Admitted.	Died.
Scrofula	270	1	1·2	1·98	804	8	3·4	·03
Phthisis and hæ- moptysis }	1,579	423	7·3		2,648	550	11·3	2·35

The admissions by consumption have been 4· and the deaths ·40 per 1,000 of the strength lower in the navy than the army, and this reduced mortality has not been the result of an excess of invaliding in the former, the proportion discharged for tubercular diseases having been 1 per 1,000 lower than in the army. It may, therefore, be fairly inferred that there is something in the condition of the sailor which renders him less amenable than the soldier to these diseases. It has already been shown that he suffers much less from syphilis; it may be a question how far the excess of that disease in the army may account for the difference. No one who has seen much of syphilis can doubt that it is a very powerful agent in the development of other constitutional diseases, and among these especially of pulmonary consumption. The beneficial influence of a sea voyage in persons predisposed to phthisis is also an acknowledged fact, and the condition of service in the navy may therefore be an important agent in the prevention of these diseases among the sailors.

DISEASES OF THE NERVOUS SYSTEM.—In this class the admissions, deaths and invaliding have been lower in the army than the navy, but the deaths have been almost identical in the two services. The excess of admissions is partly due to a number of cases in the navy having been returned under the term headache; but it is also seen in some more important diseases. Thus, in *delirium tremens* and *epilepsy*, the admissions in the navy are nearly double those in the army, as will be seen by the following table:—

	Naval Force.				Infantry Regiments.			
	Admitted.	Died.	Ratio per 1,000.		Admitted.	Died.	Ratio per 1,000.	
			Admitted.	Died.			Admitted.	Died.
Delirium tremens ...	630	19	2·9	·09	267	19	1·1	·08
Epilepsy	800	12	3·7	·06	636	8	2·7	0·3

From this it would appear that *delirium tremens* is more than twice as prevalent in the navy as in the army; but this may perhaps to some extent be accounted for by a proportion of cases bordering on that disease having been reported under the head of *intemperance* in the army, while this distinction was not recognised in the navy—a supposition which is confirmed by the rate of mortality having been almost identical in the two services. The cases of epilepsy were one-fourth more numerous in the navy, and the mortality, though very low, was double that of the army from that disease.

DISEASES OF THE CIRCULATORY SYSTEM caused very nearly the same proportion of admissions and deaths in the two services, but the invaliding from them was a fourth higher in the army. It may be a question how far this excess has been due to the equipment, clothing, and drill of the soldier.

DISEASES OF THE RESPIRATORY SYSTEM were much more prevalent but were less fatal in the navy than in the army. The excess of admissions was chiefly in cases of bronchitis, of which there were 135 per 1,000 of the strength in the navy, and only 81 per 1,000 in the army. Pneumonia and pleurisy were likewise more prevalent in the navy, the proportion of cases in it being 18·0 and in the army 8·8 per 1,000. It is probable that the difference in these diseases may be due to the greater exposure of the sailors to wet and cold. The deaths by pneumonia and pleurisy were ·89 in the navy and ·73 per 1,000 in the army.

DISEASES OF THE DIGESTIVE SYSTEM were upwards of one-half more prevalent in the navy than in the army, but with a slightly lower rate of mortality. The disease in which the great excess of cases occurred was dyspepsia, by which there were 37·4 admissions per 1,000 in the navy and 13· in the army. There was also a much higher ratio of cases of colic, the admissions being 10 per 1,000 in the former and 3 in the latter. It seems very probable that the difference in these diseases was the result of diet. In hernia, also, there was an excess in the navy, the proportion in the two services being 2·62 and 1·76 per 1,000. The greater amount of muscular exertion involved in the discharge of the sailor's duties may account for this difference.

The manner in which the naval returns have been framed does not allow of an accurate comparison of some of the other classes of diseases, particularly those of the integumentary system; but among the more prevalent affections of that class, boils, abscesses, and ulcers may be brought into comparison, and their relative prevalence has been as follows:—

	Naval Force.		Infantry Regiments.	
	Admitted.	Ratio per 1,000 Admitted.	Admitted.	Ratio per 1,000 Admitted.
Boils and abscesses	32,715	152·4	15,485	66·2
Ulcers	14,612	68·1	7,311	31·3

Thus it appears that these affections have caused more than double the proportion of admissions in the navy. The excess may probably be, to a great extent, due to three causes—the diet of the sailors, their constant exposure to the stimulating effects of the salt water upon their feet and legs, and the injuries which they receive in handling the ropes, climbing the rigging, &c.

ACCIDENTS AND VIOLENCE.—It has been already stated that the mortality under this head in the navy greatly exceeded that of the soldiers. In the former it amounted to 2·08, and among the latter to ·90 per 1,000 of mean strength annually. The total deaths by this class in the naval force in the ten years were 447; of these 275 were by drowning, of which 13 were returned as suicidal; 84 were by falls from aloft, and 18 by objects falling upon the men, leaving only 70, or ·30 per 1,000 from other causes of this class. It must be obvious that any comparison between the two services from which these deaths were not eliminated must unavoidably have led to erroneous deductions.

III.—*Mediterranean Station.*

The average strength of the naval force employed on the Mediterranean station during the ten years 1859-68, was 8,991, and that of the troops at Gibraltar and Malta was 10,681. Table C (Appendix), p. 23, shows the sickness, mortality, and invaliding, and the number constantly non-effective from sickness in the two services in each year of that period.

This table shows the admissions into hospital and the mean daily sick to have been much higher in the naval than the military force; the mortality, however, was 2·33 per 1,000 of the strength higher in the latter, but the invaliding amounted only to half that in the navy. The excess in the admissions and mean sick was apparent in every year of the decade, but that of the deaths among the military was confined to certain years, principally 1865, 1867, and 1868, the ratio in some of the other years having been lower than in the navy.

On deducting the admissions and deaths by accidents and

violence, for the reasons already stated, the following results are obtained:—

Aggregate strength	Naval Force.			Military.		
	89,910.			106,813.		
	Admitted into Hospital.	Died.	Sent Home as Invalids.	Admitted into Hospital.	Died.	Sent Home as Invalids.
Total, as in Table C.....	133,572	851	3,889	89,484	1,259	2,342
Deduct those from acci- dents and violence }	24,887	223	230	8,658	145	61
Total from diseases	108,685	628	3,659	80,826	1,114	2,281
Ratio per 1,000 of mean strength, 1859-68..... }	1,212	6·98	40·70	757	10·43	21·35
Ditto, 1830-36	1,082	9·26	—	989*	18·63*	—

* As the results for the military force during the later period are founded on the Returns from Gibraltar and Malta only, while those from the Ionian Islands also were included in Sir A. Tulloch's paper, it has been deemed necessary, for the greater accuracy of comparison, to re-calculate the ratios for the period 1830-36, in this table, excluding the Ionian Islands. These ratios, therefore, though not differing materially from, are not identical with, those stated in the previous paper.

The admissions by diseases have been one-half higher in the navy than in the army, and the proportion of men invalided has been nearly double, but the mortality has been 3·45 per 1,000 lower than that of the army. Compared with the results of the seven years 1830-36, the admissions into hospital in the navy have been one-ninth higher, while in the army they have been one-fourth lower than the average of that period. The mortality in the navy has fallen by 2·18 per 1,000 of the strength, but in the army the decrease has been 7·50, or upwards of two-fifths of the previous average.

The influence of the principal classes of diseases in causing the sickness, mortality, and invaliding in the two services is shown in the Appendix, Table D, p. 24.

MIASMATIC DISEASES have been only slightly more prevalent but much more fatal in the army than the navy; but in the latter there has been an excess in the proportion invalided to England. The following table shows the relative prevalence and mortality of the principal diseases of this class in the two services:—

Aggregate strength ...	Naval Force.				Military.			
	89,910.				106,813.			
	Admitted.	Died.	Ratio per 1,000.		Admitted.	Died.	Ratio per 1,000.	
			Admitted.	Died.			Admitted.	Died.
Eruptive fevers	466	27	5·2	0·30	144	8	1·3	0·07
Intermittent fever	1,459	—	16·2	—	241	3	2·3	0·03
Remittent and con- tinued fevers	5,768	146	64·1	1·62	14,703	320	137·6	2·99
Dysentery and diarrhœa	9,806	23	109·1	0·26	6,498	83	60·8	0·78
Cholera	22	9	0·2	0·10	316	216	2·9	2·02
Sore throat	4,305	2	47·9	0·02	1,610	—	15·1	—
Ophthalmia	996	—	11·1	—	5,763	—	54·0	—
Erysipelas	379	12	4·2	0·13	108	4	1·0	0·04
Rheumatism	8,215	7	91·4	0·08	4,598	3	43·0	0·03

Eruptive fevers were four times as prevalent and fatal in the navy as in the army, chiefly from the occurrence of small pox in 1860, 1861, 1862, and 1868, and also, though to a much less extent, from measles in 1864, and scarlet fever in 1863 and 1864. In 1860 small pox broke out in the “*Agamemnon*,” at Gibraltar, when 22 cases and 1 death occurred, and 3 cases subsequently when the ship was at Palermo. The “*Amphion*” had 14 cases and 2 deaths at Palermo, and the “*Renown*” 29 cases, all of which recovered. In the same year, 81 cases and 5 deaths occurred on board the “*Hannibal*” at Naples. In 1862 the “*Doris*,” at Beyrout, had 58 cases and 3 deaths, the disease showing itself first in January; the “*Racoon*,” at the same place, had 7 cases with 1 death, and the “*Liffey*,” 13 cases, none of which proved fatal. The “*Cressy*,” at Naples, had 3 cases with 2 deaths, and the “*Agamemnon*,” at Malta, had 6 cases in December. In these two years there were 258 cases and 17 deaths by this disease. At that period revaccination was not the rule in the navy, and was only done when the marks of vaccination were not satisfactory. It has since been adopted as a general rule, as in the army, that all men and boys entering the service shall be revaccinated; and it may be fairly hoped that the results of the next ten years will afford evidence of the wisdom of this regulation. In 1868 there were 12 cases in the “*Arethusa*” at Malta, but the disease had been contracted at the Piræus, and 11 cases, 1 of which proved fatal, in the “*Lord Warden*,” also contracted there. The history of these outbreaks of small pox shows one of the risks to which sailors are exposed more than the soldiers, that of contracting diseases which may be prevalent among the civil population of the ports at which they call, or in the vicinity of which they may be cruising.

INTERMITTENT FEVER was more prevalent in the navy than the army, the sailors being more exposed to malaria in cruising about the shores of the Mediterranean than the soldiers quartered in Gibraltar and Malta. During the period 1830-36, the proportion of cases of intermittent was very much higher in both services, but particularly in the army.

REMITTENT AND CONTINUED FEVERS were more than twice as prevalent and nearly twice as fatal in the army as in the navy. This was chiefly due to the great prevalence of fever at Malta in several years of the decade, particularly in 1859, 1860, 1867, and 1868, when the ratio of admissions ranged from 206 to 229, and of deaths from 3·86 to 8·85 per 1,000 of the strength. The disease was of local origin, depending in a great measure on defective sewerage, especially at St. Elmo, insufficient ventilation, and overcrowding of the barracks.

Compared with the results for the seven years 1830-36, there has been a slight reduction in the ratio of admissions, but a slight increase in the deaths, by these fevers, as will be seen by the following table :—

Remittent and Continued Fevers.

	Ratio per 1,000 of Mean Strength.			
	1830-36.		1859-68.	
	Admitted.	Died.	Admitted.	Died.
Naval force	77·9	1·40	64·1	1·62
Military „	161·6	2·53	137·6	2·99

Dysentery and Diarrhœa were much more prevalent among the sailors than the soldiers, a result probably of their diet and also of their greater exposure to malaria; but the mortality in the army was thrice as high as in the navy. Compared with the previous period there has been an increase in their prevalence in the navy, but a decrease to the extent of one-half in the army—the reduction in the latter probably due to improved diet. In both services, but especially in the army, there has been a marked reduction in the mortality.

Cholera prevailed as an epidemic twice at Gibraltar and twice at Malta during the ten years. The first epidemic at Gibraltar was in 1860, from August till December, when, in a strength of 5,609, there were 50 cases and 31 deaths among the troops. It broke out in Malta in June, 1865, when there were 117 cases and 86 deaths in

a strength of 5,523 ; and in the same year it prevailed at Gibraltar from August till October, causing 121 admissions and 76 deaths in a force of 4,803 men. It appeared again in Malta in July, 1867, when 27 cases and 22 deaths occurred in a strength of 4,919 men. On all these occasions, except 1865, the navy escaped the disease, and in that year it had only 10 cases and 7 deaths in a force of 7,240 men ; 4 cases and 3 deaths occurred in one of the ships at the mouth of the Danube, where the disease was then prevalent among the population, 2 cases occurred at Alexandria, and 3 fatal cases at Malta. The navy enjoys the great advantage over the army of being able, when this disease breaks out as an epidemic in any locality, to withdraw from the infected place. This was done on both occasions when it appeared in Malta, as many of the ships as could be spared having gone on a cruise and not having returned till the epidemic was at an end.

As in the Home Force, so in the Mediterranean Command, sore throat, erysipelas, and rheumatism were much more prevalent in the naval, and ophthalmia in the military force.

VENEREAL DISEASES were more prevalent in the military than the naval force ; but the difference was by no means so great as on the Home Station, a result probably of the police regulations in Malta. In both services these diseases were much less prevalent than on the Home Station ; but while the reduction in the army is considerably more than half, in the navy it amounts only to one-third. It is worthy of note that the reduction in the army is much greater in syphilis than in gonorrhœa, the admissions by it being a mere fraction above the navy, while the relative prevalence of gonorrhœa is thrice as high in the former as in the latter, as will be seen by the following table :—

	Naval Force.		Military Force.	
	Admitted into Hospital.	Ratio per 1,000 of Strength.	Admitted into Hospital.	Ratio per 1,000 of Strength.
Syphilis	4,529	50·4	5,616	52·6
Gonorrhœa	1,337	14·9	5,665	53·0
Stricture	336	3·7	277	2·6

The low ratio of cases of gonorrhœa in the navy is perhaps, as before pointed out, the result of the system of treating such cases without taking the men off the duty list. It is worthy of remark that, although the ratio of admissions by gonorrhœa is so very much lower in the navy, stricture of the urethra is relatively more prevalent than in the army.

TUBERCULAR DISEASES were rather more prevalent and fatal in the naval than the military force, and, the invaliding for these diseases from the former was more than thrice as high as from the latter. These results show a marked difference from those of the earlier period, when both admissions and deaths were much higher in the army—a result, it was supposed, of the greater facilities the navy then enjoyed for invaliding. If the cases of consumption and hæmoptysis alone be taken the proportion of admissions and deaths in the two services for the two periods were as follows:—

	1830-36.					1859-68.				
	Strength.	Admit- ted.	Died.	Ratio per 1,000.		Strength.	Admit- ted.	Died.	Ratio per 1,000.	
				Admit- ted.	Died.				Admit- ted.	Died.
Naval force	55,709	432	108	7·7	1·94	89,910	887	166	9·9	1·85
Military „	37,899	409	197	10·8	5·20	106,813	878	162	8·2	1·52

From this table it will be seen that there has been an increase of 2 per 1,000 in the admissions and a very trifling decrease in the deaths in the navy by these two diseases, while there has been a decrease of $2\frac{1}{2}$ in the admissions, and of above $3\frac{1}{2}$ in the deaths, per 1,000 of the strength in the military force, and the mortality of the soldiers by them, instead of being, as formerly, considerably more than double, has been one-fifth lower than that of the sailors, even with the invaliding thrice as high among the latter. Though it is difficult to trace precisely the causes to which such reduction is due, it seems probable that in this instance it has been to a great extent the result of the rotation system of reliefs by which corps, instead of serving ten years continuously in the Mediterranean, are relieved at the end of their third or fourth year. By this system the period of continuous service in the Command was assimilated in the army to that of the navy, and if the conjecture hazarded above be correct, with the most beneficial results.

DISEASES OF THE NERVOUS SYSTEM gave rise to a much higher ratio of admissions and invaliding in the navy than the army, but the mortality differed very slightly in the two services. The excess of the admissions was chiefly in cases of headache, and of inflammation of the ear and deafness, the two latter probably a result of the sailor's exposure to cold and wet. As on the Home Station, epilepsy and delirium tremens were found to be much more frequent among the sailors than the soldiers, as will be seen by the following table:—

	Naval Force.				Military.			
	Admitted.	Died.	Ratio per 1,000.		Admitted.	Died.	Ratio per 1,000.	
			Admitted.	Died.			Admitted.	Died.
Delirium tremens	306	15	3'40	·17	236	10	2'21	·09
Epilepsy	303	1	3'37	·01	258	4	2'41	·04

Thus, both these diseases are about one-third more prevalent among the sailors than the soldiers, but in neither service do they give rise to a high rate of mortality. Compared with the results for the seven years 1830-36, there has been a marked increase in the admissions by delirium tremens and a very slight decrease in epilepsy in the naval, but a moderate increase in both in the military, force.

Diseases of the circulatory system are rather more prevalent in the military than the naval force, but with a lower ratio of deaths. The ratio of admissions differs very little from that in the two services on the Home Station.

Diseases of the respiratory and digestive systems, and boils, abscesses, and ulcers, were much more frequent among the seamen than the soldiers, and in both services were much more prevalent than at home, with the exception of those of the respiratory system among the soldiers, which caused little more than half the proportion occurring among infantry in the United Kingdom. The excess of boils, abscesses, and ulcers among the sailors in the Mediterranean was very marked, the ratio of admissions being nearly double that of the Home Stations, while among the troops the increase was only one-fourth.

It has already been shown that the ratio of deaths from violence and accidents was nearly twice as high in the naval as in the military force. Of 223 deaths in the former, 77 were reported as caused by the men falling from aloft, 21 by objects falling on them, and 91 by drowning, leaving only 34 by other causes of this class. The difference in the mortality of the two services from accidents and injuries was nearly the same in the Mediterranean as at Home, the excess in the navy having been 1'12 per 1,000 of the strength in the former, and 1'17 per 1,000 in the latter. The invaliding of the navy for these causes, however, from the Mediterranean, was 1'99 per 1,000, while at home it was only 1'06 per 1,000 above the army.

To recapitulate briefly the leading facts brought out by these data, it may be stated that on the Home Station, omitting wounds

and injuries, the sickness has been one-ninth higher, the mortality $\cdot 70$ and the invaliding $2\cdot 28$ per 1,000 lower in the navy than the army. The result as to the mortality has been probably influenced by the much larger proportion of boys in the former. The excess of admissions in the navy has been chiefly from miasmatic diseases—particularly eruptive fevers, dysentery and diarrhoea, sore throat, and erysipelas; from diseases of the respiratory and digestive systems, from boils, abscesses, and ulcers, and from accidents; while in the army there has been an excess in ophthalmia, venereal diseases, and the group of unclassified diseases. The excess of mortality in the army has been principally in tubercular diseases and those of the respiratory system. Compared with previous periods, there has been a great reduction in both sickness and mortality, the former much more marked in the navy, and the latter in the army.

In the Mediterranean the sickness has been lowest in the army, and the mortality in the navy; but the invaliding from the latter has been nearly double that of the army. The excess of admissions in the navy has been chiefly in miasmatic diseases, particularly eruptive and paroxysmal fevers, dysentery and diarrhoea, sore throat and rheumatism, in diseases of the nervous, respiratory, and digestive systems, and in boils, abscesses, and ulcers; while in the army the admissions were higher from remittent and continued fevers, cholera, and ophthalmia, venereal diseases, and the unclassified group. The excess of mortality in the army was in miasmatic diseases, especially remittent and continued fevers, dysentery, diarrhoea, and cholera, and in diseases of the circulatory and respiratory systems, and the unclassified diseases; while in the navy there was an excess in tubercular diseases, and in boils, abscesses, and ulcers. The high ratio of invaliding from the navy was chiefly caused by tubercular diseases, but it was higher than in the army by all classes of diseases, except those of the respiratory system and the unclassified. Compared with the previous period, there has been a considerable increase in the admissions into hospital in the navy and decrease in the army, and a great reduction in the deaths in both services, much more marked however in the army than the navy.

A study of these leading features in the prevalence and mortality of the various groups of diseases in each service, would naturally suggest the direction in which further preventive measures must be taken.

Having thus endeavoured to show, as concisely as possible, the principal differences in the sickness and mortality of seamen and soldiers, so far at least as regards temperate climates, the improved position of both services in regard to health which has been realised during the last thirty years by judicious legislation, and the direction in which further efforts for this purpose may be made, it

may not be amiss, before concluding, to point out how much the army has been indebted to that science which it is the special object of this Society to cultivate, for an amelioration in the condition of the soldier, the extent of which, it is believed, has not yet been fully recognised and appreciated. It was not till 1835 that the numerical method of investigation was applied on a comprehensive scale to questions relating to the losses of the army by sickness, mortality, and invaliding, and it was not till 1838, when the first report on the subject was placed in the hands of the Secretary at War, that a succession of sanitary measures, based on the information thus acquired, was commenced. These investigations were continued for several years subsequently, until a series of reports, embracing all the colonies and dependencies of the Crown, except India, was completed, and many important changes introduced into the army in consequence. Although from unavoidable causes the preparation of a second series of these reports was interrupted after the publication of one volume, a *précis* of the information relative to the health of the army was annually prepared in the War Office for the information of the Secretary at War, and many important measures founded upon it were introduced. On the reorganisation of the Army Medical Department after the Crimean war, the importance of the statistical method of inquiry was recognised by the formation of a special branch, and from the reports prepared by it, the information relating to the army which has just been read has been compiled.

But it may be asked what has been the practical result of these labours of thirty-five years? When they were first commenced, the mortality of the army, so far as it could be ascertained, for the data were by no means perfect, amounted to at least 3 per cent. annually; on the average of the five years 1865-69, it was under $1\frac{3}{4}$ per cent.—to speak precisely it was 16.55 per 1,000. Taking the strength of the army, exclusive of colonial corps, from the army estimates for 1871-72 as 184,000 non-commissioned officers and men, the difference in the mortality represents a saving of above 2,300 lives annually—a saving of no small importance, and representing, even at the lowest estimate of the cost of production of a trained soldier, a large sum of money, which would be necessary to replace these men. It must not, however, be supposed that this money value has been all realised in a reduction of expenditure; many of the improvements referred to have been effected by means of a large outlay, but even after making a very liberal deduction on this account, there will still remain a considerable pecuniary saving as a result of these measures. It should also be remembered that another consequence of this judicious expenditure has been to remove some of those objections to service in the army which rendered it

unpopular, increased the difficulty and consequently the expense of recruiting, and deterred a better class of men from joining its ranks. Nor must the reduced rate of mortality be entirely attributed to the sanitary improvements which have taken place—important though the results of these have been. There are other measures which have exerted a powerful influence in this respect, and of these may be specially mentioned the system of limited service introduced in 1849. But this in no degree detracts from the value of the benefits conferred on the army by statistical science, as the difficulties which stood in the way of that measure were, to a great extent, removed by it. One of the chief objections urged against limited service, or perhaps it would be more correct to say, one of the chief arguments adduced in favour of enlistment for life, was based on the theory of acclimatisation, the correctness of which was tested and disproved by statistical evidence in the earlier volumes of the reports on the health of the army.

Before concluding, I desire to record the names of those under whose auspices, and by whose judicious administration, results of so great importance, whether viewed in the light of humanity, finance, or military policy, have been obtained. I would specially note Sir James McGrigor, who, as Director-General of the Army Medical Department, organised those returns on which the first series of reports was based, and who, for upwards of twenty years, continued to collect them with a wise prescience that the time would come when their value would be justly estimated, and their important teaching be turned to account. Lord Howick (now Earl Grey) was the first Secretary at War to appreciate the advantages of statistics in the examination of the important health questions of the army, and to apply judiciously the knowledge thus acquired to ameliorate the condition of the soldier and increase the efficiency of the service. Mr. Fox Maule (now Earl of Dalhousie) following the course thus begun, not only continued and added to the sanitary improvements already initiated, but carried through Parliament the bill abolishing the system of life service, and thus removed from our Government the blot of permitting lads scarcely arrived at manhood—infants in the eye of the law in all other matters—to sell themselves for the remainder of their lives without even the power of redemption, unless accorded to them as a favour. Mr. Sidney Herbert (the late Lord Herbert of Lea), justly appreciating the labours of his predecessors, gathered into one harmonious whole the scattered facts relating to military hygiene, and in his reorganisation of the Army Medical Department, established as a permanent institution, a statistical branch for the working of that science which had already done so much in pointing out the direc-

tion in which sanitary improvement was required, and in testing the effect of those measures which had been applied with a view to the removal of the causes of sickness and mortality among the soldiers.

But while mentioning the names of those under whose administration these great measures were introduced, I must not omit to pay a just tribute to two fellow-workers, now passed away, to whom much of the success of these statistical inquiries was due. Dr. Henry Marshall, Deputy Inspector-General of Hospitals, was one of the first pioneers in those labours, of which the results have just been brought before you. To his practical knowledge of the numerical method of investigation, his sound good sense, his clear judgment, and his indefatigable industry, much of the early success which attended these inquiries may be attributed. Sir Alexander Tulloch was too well known to this Society to require any eulogium on the present occasion. For a quarter of a century he was actively engaged labouring for the benefit of the soldier; and during the time before referred to, when the publication of the statistical reports was in abeyance, on him devolved the duty of examining the numerous statistico-sanitary reports from all our foreign possessions, and submitting for the consideration of the Secretary at War such suggestions in them as seemed likely to be beneficial and practicable. The manner in which this work was performed may perhaps be best estimated by the confidence reposed in him by the various Ministers under whom he served, and by the valuable practical results of the measures which were based on his reports. Nor may I omit from the list of distinguished labourers in this field, the honoured name of Florence Nightingale, to whose intelligence and energy the army has been so deeply indebted. Although now a confirmed invalid, Miss Nightingale has given us recent proof, in her "Notes on 'Lying-in Institutions,'" not only that her intellect is as bright as ever, and that she continues to take a warm interest in great health questions, but of her continued faith in statistics as the sure basis for sanitary improvement, and of her great talent in applying the lessons deduced from its teaching.

I shall conclude, with the expression of a sincere hope that the science which it is our great object and delight to cultivate, may long continue to be appreciated by those in authority, and to produce results of a nature as satisfactory and as beneficial as those which have this evening been brought under your notice.

APPENDIX.

TABLE A.—*Royal Navy, Home* (see p. 4).

Year.	Mean Strength.	Admitted into Hospital.	Died In and Out of Hospital.	Discharged as Invalids.	Mean Daily Sick.	Ratio per 1,000 of Mean Strength.			
						Admitted into Hospital.	Died.	Discharged as Invalids.	Constantly Sick.
1859	19,300	22,775	188	516	968·9	1,177	9·7	26·7	50·2
'60	23,500	25,670	263	690	935·4	1,092	11·2	29·4	39·8
'61	22,900	24,525	220	715	1101·5	1,071	9·6	31·2	48·1
'62	20,760	23,641	173	640	1002·5	1,139	8·2	30·8	48·2
'63	21,570	22,788	153	625	989·3	1,056	7·0	28·9	45·8
'64	19,630	21,028	154	636	932·2	1,071	7·8	32·3	47·4
'65	20,980	21,507	151	543	954·5	1,025	7·1	25·8	45·4
'66	21,200	20,961	171	554	895·7	989	8·0	26·1	42·2
'67	21,600	18,951	161	426	814·6	877	7·4	19·7	37·7
'68	23,200	20,695	176	510	876·1	892	7·5	21·9	37·7
Total	214,640	222,541	1,810	5,855	9470·7	1,037	8·43	27·28	44·12

Infantry Regiments, at Home (see p. 4).

Year.	Mean Strength.	Admitted into Hospital.	Died In and Out of Hospital.	Discharged as Invalids.	Mean Daily Sick.	Ratio per 1,000 of Mean Strength.			
						Admitted into Hospital.	Died.	Invalided.*	Constantly Sick.
1859	19,621	18,915	149	—	999	964	7·59	—	50·91
'60	25,117	22,711	250	535	1,210	904	8·95	21·3	48·13
'61	26,719	22,677	205	935	1,232	849	7·67	35·0	46·12
'62	29,439	24,493	197	757	1,344	832	6·69	25·7	45·65
'63	24,331	19,643	188	825	996	807	7·68	33·9	40·92
'64	20,748	16,599	182	683	864	800	8·77	32·9	41·65
'65	22,486	17,711	169	769	969	788	7·51	34·2	43·09
'66	19,545	14,781	140	516	724	756	7·16	26·4	37·04
'67	20,644	16,149	179	496	769	782	8·67	24·0	37·24
'68	25,208	20,369	201	590	929	808	7·97	23·4	36·84
Total	233,858	194,048	1,860	6,106	10,036	830	7·95	28·50	42·92

* Invaliding calculated on a strength of 214,237.

TABLE B.—Referred to on p. 5.

Aggregate strength	Naval Force, Home, 1859-68.					
	214,640.					
	Admitted into Hospital.	Died.	Discharged as Invalids.	Ratio per 1,000.		
				Admitted.	Died.	Invalided.
Miasmatic diseases	39,842	232	776	185·6	1·08	3·62
Venereal „	23,685	9	232	110·4	0·04	1·08
Parasitic „	5,970	—	2	27·8	—	0·01
Diathetic „	727	37	38	3·4	0·17	0·18
Tubercular „	1,849	424	1,082	8·6	1·98	5·04
Diseases of the—						
Nervous system	4,147	130	960	19·3	0·61	4·47
Circulatory system	1,819	176	717	8·5	0·82	3·34
Respiratory „	33,097	195	239	154·2	0·91	1·11
Digestive „	12,436	96	740	57·9	0·45	3·45
Urinary „	552	29	142	2·6	0·13	0·66
Boils, abscesses, and ulcers	47,327	14	296	220·5	0·06	1·38
All other diseases	11,341	8	189	52·8	0·04	0·88
Accidents and violence	39,759	447	442	185·2	2·08	2·06
Causes not stated.....	—	13	—	—	0·06	—
Total	222,541	1,810	5,855	1036·8	8·43	27·28

Aggregate strength	Infantry Regiments, Home, 1859-68.					
	233,858.					
	Admitted into Hospital.	Died.	Discharged as Invalids.*	Ratio per 1,000.		
				Admitted.	Died.	Invalided.*
Miasmatic diseases	31,781	216	838	135·9	0·92	3·91
Venereal „	56,807	21	295	242·9	0·09	1·38
Parasitic „	8,157	—	6	34·9	—	0·03
Diathetic „	685	20	35	2·9	0·08	0·16
Tubercular „	3,448	558	1,299	14·7	2·39	6·06
Diseases of the—						
Nervous system	3,666	153	771	15·7	0·65	3·60
Circulatory system	1,887	219	959	8·1	0·94	4·48
Respiratory „	21,371	274	647	91·4	1·17	3·02
Digestive „	7,754	126	375	33·1	0·54	1·75
Urinary „	543	34	61	2·3	0·15	0·29
Boils, abscesses, and ulcers	21,953	4	84	93·9	0·02	0·39
All other diseases.....	19,661	22	514	84·1	0·09	2·40
Accidents and violence	16,057	212	215	68·7	0·91	1·00
Causes not stated.....	278	1	7	1·2	—	0·03
Total	194,048	1,860	6,106	829·8	7·95	28·50

* The ratio per 1,000 discharged as invalids from the infantry regiments, has been calculated on a strength of 214,237, the number discharged in 1859 being unavoidably omitted.

TABLE C.—*Naval Force, Mediterranean* (see p. 11).

Year.	Mean Strength.	Admitted into Hospital.	Died In and Out of Hospital.	Sent to England as Invalids.	Mean Daily Sick.	Ratio per 1,000 of Mean Strength.			
						Admitted into Hospital.	Died.	Sent Home as Invalids.	Constantly Sick.
1859	11,100	16,792	125	416	571·7	1,512	11·2	37·5	51·5
'60	14,210	20,915	145	988	823·0	1,473	10·2	69·5	57·9
'61	16,600	25,946	172	753	1026·0	1,561	10·4	45·4	61·8
'62	9,950	15,423	97	350	554·1	1,550	9·7	35·1	55·6
'63	8,470	13,844	81	363	453·1	1,634	9·5	42·8	53·3
'64	7,920	10,791	62	291	356·4	1,362	7·8	36·7	45·0
'65	7,240	10,051	60	249	342·4	1,388	8·2	34·3	47·3
'66	5,520	7,797	30	230	276·2	1,412	5·4	41·6	50·0
'67	4,800	6,424	43	139	216·9	1,338	8·9	28·9	45·1
'68	4,100	5,589	36	110	210·7	1,363	8·7	26·8	51·3
Total	89,910	133,572	851	3,889	4830·5	1,486	9·46	43·25	53·72

Military Force, Mediterranean (see p. 11).

Year.	Mean Strength.	Admitted into Hospital.	Died In and Out of Hospital.	Sent to England as Invalids.	Mean Daily Sick.	Ratio per 1,000 of Mean Strength.			
						Admitted into Hospital.	Died.	Sent Home as Invalids.	Constantly Sick.
1859	10,463	11,335	141	156	517	1,083	13·48	14·9	49·41
'60	11,559	10,478	125	137	509	906	10·81	11·8	44·03
'61	11,705	9,894	119	288	564	845	10·17	24·6	48·18
'62	11,452	8,966	96	245	476	774	8·38	21·4	41·56
'63	11,104	8,523	69	258	464	716	6·21	23·2	41·79
'64	10,935	8,471	67	273	446	775	6·13	25·0	40·79
'65	10,326	8,503	260	349	416	823	25·18	33·8	40·29
'66	9,787	7,490	87	191	407	790	8·89	19·5	41·59
'67	9,474	7,481	154	221	389	790	16·25	23·3	41·06
'68	10,008	8,343	141	224	421	834	14·09	22·4	42·07
Total	106,813	89,484	1,259	2,342	4,609	838	11·79	21·93	43·15

TABLE D.—Referred to on p. 11.

Aggregate strength	Naval Force, Mediterranean, 1859-68.					
	89,910.					
	Admitted into Hospital.	Died.	Sent Home as Invalids.	Ratio per 1,000 of Strength.		
				Admitted.	Died.	Invalided.
Miasmatic diseases	31,421	227	664	349·5	2·52	7·39
Venereal „	6,202	—	144	69·0	—	1·60
Parasitic „	1,005	—	3	11·2	—	0·03
Diathetic „	177	8	20	2·0	0·09	0·22
Tubercular „	982	169	1,105	10·9	1·88	12·29
Diseases of the—						
Nervous system	2,610	53	427	29·0	0·59	4·75
Circulatory system	798	51	357	8·9	0·57	3·97
Respiratory „	15,767	46	115	175·4	0·51	1·28
Digestive „	6,879	45	402	76·5	0·50	4·47
Urinary „	223	5	48	2·5	0·06	0·53
Boils, abscesses, and ulcers	38,271	12	207	425·6	0·13	2·30
All other diseases.....	4,350	11	167	48·4	0·12	1·57
Accidents and violence	24,887	223	230	276·8	2·48	1·86
Causes not stated.....	—	1	—	—	0·01	—
Total	133,572	851	3,889	1485·6	9·46	43·25

Aggregate strength	Military Force, Mediterranean, 1859-68.					
	106,813.					
	Admitted into Hospital.	Died.	Sent Home as Invalids.	Ratio per 1,000 of Strength.		
				Admitted.	Died.	Invalided.
Miasmatic diseases	33,975	611	521	318·1	5·72	4·88
Venereal „	11,558	2	86	108·2	·02	·81
Parasitic „	961	—	1	9·0	—	·01
Diathetic „	454	14	15	4·2	·13	·14
Tubercular „	1,032	169	403	9·7	1·58	3·77
Diseases of the—						
Nervous system	1,877	54	330	17·6	·51	3·09
Circulatory system	814	91	251	7·6	·85	2·35
Respiratory „	5,285	68	214	49·5	·64	2·00
Digestive „	4,506	60	169	42·2	·56	1·58
Urinary „	241	20	19	2·2	·19	·18
Boils, abscesses, and ulcers	12,657	2	60	118·5	·02	·56
All other diseases.....	7,466	23	198	69·9	·21	1·85
Accidents and violence	8,658	145	61	81·1	1·36	·57
Causes not stated.....	—	—	9	—	—	·08
Total	89,484	1,259	2,337	837·8	11·79	21·87

*On the LIMITS of LEGISLATIVE INTERFERENCE with the SALE of
FERMENTED LIQUORS. By PROFESSOR LEONE LEVI, F.S.A., F.S.S.,
&c., &c.*

[Read before the Statistical Society, 16th January, 1872.]

CONTENTS:

	PAGE		PAGE
I.—The Paper	25	APPENDIX—Tables A to M	42

No facts are more deserving the attention of the Statist than those which reveal the morals of the nation, since by them we may probe the inner life of the people, and test the solidity of the very foundations of society. Crime, immorality, drunkenness, manifest themselves by outward acts; their numbers are recorded, and they are capable of statistical arrangement. It is for us to bring them to light, and for the moralist to deduce from them the lessons which they convey. It would be impossible, indeed, to descant on any of the evils of life, with a cold and stoical indifference, for we are all interested parties in their issues, the cost of crime forming a sensible addition to our taxation, yet it is possible, that by observing a large number of facts, occurring over periods extending through a lengthened course of time, and by bringing other facts to our aid, we may be able to derive satisfaction, where others might be disposed to despond. In any case, it is the province of this Society, to deduce from the facts before us only such inferences as they themselves suggest, and to reason upon them, without any bias of preconceived notions.

Great diversity of opinion exists as to the physiological and social effects of the use of fermented liquors. Not a few are ready to assert that they are most pernicious to society; that they are the direct or indirect causes of much of our pauperism and crime; that, not being themselves constituents of food, the entire amount expended in them is utterly wasted; that such a drain of national resources reduces the amount of capital employed in production, and that, under such circumstances, it would be a wise national policy either to prohibit altogether the use of fermented liquors, or, at least, to place within the power of any community, by a majority of votes, to limit or forbid the public sale of the same. On the other hand, it is argued, that the use of such liquors, in moderation, is not pernicious, but useful to health; that although excess in drinking is often the cause of pauperism and crime, so any excess

or vice may be attended by the same results; that it is scarcely consistent with general experience to assert that the use of fermented liquors is always attended with excesses and drunkenness, and that in so far as fermented liquors are not used excessively, the consumption is not wasteful, and the expenditure in them is not altogether unproductive. It is needless for the purpose of this paper to discuss the merits of the arguments used on either side, nor would it be consistent with the object of the Society to pronounce any opinion on them. It may be sufficient to state, that the consumption of fermented liquors is extensive in this and in almost every country; that such beverages have been used from time immemorial by people of every grade of society, and that an important interest has been created connected with them, from which a large number of persons derive their means of subsistence.

Fermented liquors are partly produced in the United Kingdom, and partly imported from foreign countries. Beer, gin, and cider are home productions; brandy, rum, and wine, are foreign or colonial. Altogether, they form an important branch of British industry, requiring the investment of a large amount of capital. Some idea of the amount so invested may be formed from the following facts. Let us deal first with the fixed capital. In the year ended 31st March, 1869, there were brewed in the United Kingdom 49,590,000 bushels,* or about 6,200,000 quarters of malt. The fixed capital required for the plant, land, machinery, &c., for brewers, has been estimated at 2*l.* per quarter, and, at that rate, the fixed capital employed in breweries amounts to a total of 12,400,000*l.* Any one who visits the breweries in the metropolis, some of them in the heart of the city, or those of Messrs. Bass and Allsops, in Burton-on-Trent, will see what large portion of land is required for the purpose.† In the production of spirits there are two distinct operations—the distilling and rectifying—both of which require extensive premises. The quantity of spirits distilled in the same year was 26,000,000 gallons, and at 20 gallons to 1 quarter of grain, there are consumed for the purpose other 1,300,000 quarters. Taking the cost of the land, plant, and buildings, for each process of distilling and rectifying, at 2*l.* per quarter, we have a total for these items of about 5,200,000*l.* And adding to this another half-a-million as the value of the plant required in the production of subsidiary industries, such as glass bottles, labels, &c., we have 18,100,000*l.* of fixed capital.

* The quantities are all taken from the Reports of the Commissioners of Inland Revenue.

† Messrs. Bass's breweries in Burton-on-Trent stand on 70 acres. Messrs. Bass have three breweries, almost of equal size, each of which is capable of brewing its 60,000 quarters of malt annually. They possess 500,000 casks, and they employ over 4,700 persons.

The floating capital employed in the business is larger still. The raw materials used in brewing are 6,200,000 quarters barley or other grain; about 600,000 cwt. hops, and about 350,000 cwt. sugar, which, at the average prices of 36s. per quarter (Table M) for barley, 5*l.* per cwt. for hops, and 30s. per cwt. for sugar, give a cost of nearly 14,700,000*l.*; add to this 5s. per quarter for malting, and 30s. per quarter for brewing, which include a percentage for the depreciation of the plant, the cost of coals, casks, transport, interest of capital, &c., and we have a total of 25,500,000*l.* The materials required for distilling 26,000,000 gallons of spirits are 1,300,000 quarters barley or other grain, of the value of 2,100,000*l.*, and some juniper berries and other flavouring substances. Assuming the cost of these substances and the cost of distilling and rectifying to be about 1s. per gallon, or 1,300,000*l.*, we have a total of 3,400,000*l.* We have, moreover, the declared value of foreign and colonial spirits imported, 2,000,000*l.*, and of wine 5,250,000*l.*, besides importers' charges and profits 700,000*l.*, total 7,950,000*l.* Then, we must add the value of the raw materials and wages required in the production of corks and glass bottles 5,000,000*l.* And the duties which the producer and importer must pay before producing or selling, amounting in all to 23,780,000*l.*, giving a total of about 65,630,000*l.* of floating capital. What proportion of this capital is actually invested at any one time, it is not easy to estimate, but considering that brewers brew mostly twice a-year, and that a large portion of spirits and wine is kept in store for some time, before it is sold, we may calculate that probably the half of the amount, or 32,700,000*l.*, is really embarked in the business during the year (Table A).

It is not sufficient, however, to consider the amount employed in the production of fermented liquors, since their distributors, dealers, and retailers have also a large capital invested in them. There are, in round numbers, in the United Kingdom, 150,000 public and beer-houses,* and their leases, goodwill, and fixtures, have a very high value in the market. In London, as much as 20,000*l.* has been given for the lease and goodwill of one house, and the 10,000† of them in the metropolis cannot be estimated at less than at 1,500*l.* each (Table B). In the country, especially in the large towns, such as Liverpool, Manchester, Glasgow, and Dublin, the leases and goodwill are sold at very high prices, but taking into account the number of small houses in villages, we may assume their average value at 300*l.*, and at these rates the capital invested in this species of property is 57,000,000*l.* There are, moreover, nearly 6,000

* See Reports of the Commissioners of Inland Revenue.

† In 1870 the number of public and beerhouses within the metropolitan police district, was as follows:—public-houses 7,753; beershops, to be consumed on the premises, 5,139; to be consumed off the premises, 245, and retailers of beer who were also dealers, 523.

dealers of fermented liquors in the kingdom, many of whom have extensive premises. Assuming the value of such premises to be only 500*l.* each, the capital represented by them would be 3,000,000*l.*, so making a total of 60,000,000*l.* of fixed capital employed in the houses for the sale of fermented liquors.* Add to this the floating capital required for the wages of agents, coopers, and public-house servants, &c., amounting in all to 16,000,000*l.*, and the licence duties of dealers and retailers of beer, spirits, and wines, 1,200,000*l.*, they make a total of 17,200,000*l.*, which will represent 8,600,000*l.* of actual investments! Altogether we have a total of 78,000,000*l.* of fixed,† and 40,300,000*l.* of floating capital, or 118,300,000*l.* in all, employed in various ways in the business of producing and selling fermented liquors (Table C).

In any comparison of the capital invested in this industry and in other principal manufactures, we must take no account of the capital invested in the sale of fermented liquors. Whereas public and beerhouses sell liquors only, haberdashers, for instance, sell cotton, woollen, linen, and other articles, British and foreign. Taking only what is comparable, the capital invested in production, and using for the purpose estimates given by the best authorities, such as Sir Thomas Bazley, M.P., for the cotton manufacture, and Mr. Baines, M.P., for the woollen, it would appear that whilst in the production of beer and spirits there are about 40,000,000*l.* invested, in the proportion of 43*l.* per cent. fixed to 57*l.* per cent. floating; in the cotton manufacture there are invested 85,000,000*l.*, in the proportion of 55*l.* fixed to 45*l.* floating; and in the iron manufacture, 25,500,000*l.*, in the proportion of 39*l.* fixed and 61*l.* floating. It has been suggested that in the production of fermented liquors, but few individuals are employed; but the 20,000,000*l.* of floating capital so invested, go largely in wages of agriculturists for the production of grain, and in wages of the large number employed in the breweries or distilleries. Taking into account the number of persons employed in public and beer houses and their dependants, probably not less than 1,500,000 persons draw their subsistence from this industry (Table D).

From this interest, the revenue of the country derives a very

* The "Quarterly Review" of October, 1871, estimated the value of houses in the country at 500*l.*

† The Rev. Dawson Burns, superintendent of the United Kingdom Alliance, would limit the capital employed in the plant and houses for the sale of alcoholic liquors to the value of the property dependent on the traffic. Taking the estimate of 78,000,000*l.*, he deducts from it the value of fixed capital otherwise available than in the liquor traffic, 51,900,000*l.*, and so reduces the amount to 26,000,000*l.* It is needless to state that the estimate in this paper gives the commercial value engaged in the business. What might be the value of the property if otherwise employed it is not the question of this paper to discuss. Mr. Burns admits that if the estimate is meant to represent so much commercial value employed in the liquor and accessory trades, "there is no reason to doubt its substantial accuracy."

large amount. In the year ended 31st March, 1871, the amount of duty received from this source was as follows:—

	£
Customs on foreign and colonial spirits....	4,419,000
„ wine	1,584,000
Excise on malt.....	6,978,000
„ spirits	11,464,000
„ licences	1,740,000
	<hr/>
	26,185,000
	<hr/>

which, in a total revenue of 69,945,000*l.*, gave a proportion of 37 per cent. (Table E). In most countries, beverages contribute a considerable portion of the revenue. In Russia, in 1868, the revenue from them was 48,000,000 silver roubles in a total of 233,000,000 silver roubles, or about 20 per cent. In France, in 1869, beverages contributed 235,000,000 frs. in a total of 170,000,000 frs., or about 14 per cent. In Belgium, in 1868, 11,500,000 frs. in a total of 169,000,000 frs., or about 9 per cent. Nowhere, however, is the revenue so dependent on beverages as in the United Kingdom, and it is a question how far is it desirable that it should be so. Yet so long as we continue to have a mixed system of direct and indirect taxes, no article seems a fitter subject of taxation than beer, spirits, and wine. They are extensively used by every class of society—they are not absolute necessities of life—and certainly the duties do not press hard on the people. Let us lessen, or abolish altogether, the duties on tea, coffee, and sugar, but there is no reason to abolish the duties on beer, spirits, or wine.

When, however, we depart from the general principle, and enter into the details of such taxation, there is much that is objectionable in the mode of levying the revenue on these articles. The malt tax has been complained of as a burden upon agriculture, and as interfering with the rotation of the crops. The tax, moreover, bears a very high proportion to the cost of beer. Taking the cost of a quarter of malt at 2*l.* 2*s.* 9*d.*, the duty of 1*l.* 1*s.* 8*d.* is more than 50 per cent. on the cost price. On the incidence of the malt tax a Committee of the House of Commons sat in 1867. The malt duty has been uniformly 2*s.* 7*d.*, and 5 per cent. per bushel since 1823, with the exception of from 1855 to 1857, during the Russian war, and in consequence of the gradual increase of consumption the revenue increased from 4,300,000*l.* in 1830, to 6,500,000*l.* in 1870. The spirits duties have undergone considerable changes, especially in Scotland and Ireland. In 1830 the duty in England was 7*s.*, and in Scotland and Ireland 2*s.* 10*d.* per gallon. But since 1862 the duty has been uniform at 10*s.* in the United Kingdom, the proportion of duty to the cost of the article being immoderately large. The duties on foreign and colonial spirits have been lowered in

1860 from 15s. to 10s. 5d. per gallon. And the wine duty has been reduced from 5s. 9 $\frac{1}{10}$ d. to 1s. per gallon for the lighter descriptions, containing less than 26 degrees of proof spirit, and 2s. 6d. for those containing 26 degrees and less than 42 degrees of proof spirit, this gradation acting injuriously against Portuguese and Spanish wines. Most objectionable of all, however, is the licence duty. Why should a brewer require a licence and not a cotton manufacturer? Why should an auctioneer's licence cost 10l., regardless of the number and amount of his sales, and a brewer's licence be charged in relation to the quantity produced? No interference is allowed with the exercise of other professions. Why should State interference stand in the way of every act of the producer and seller of fermented liquors? The licence duty, as a means of revenue, is a highly objectionable tax, on whomsoever levied, and in the case of retailers of beer and spirits it has the additional disadvantage of giving them the appearance of being privileged or licensed traders, and of acting with the consent and under favour of the legislature.*

Besides interfering with this interest for purposes of revenue, the legislature imposes also restrictions for purposes of police. The first statute on record having this object in view, was the 5 and 6 Edward VI, cap. 25, which, after reciting "the intolerable hurts" and troubles to the commonwealth of this realm, that daily grew "and increased through the abuses and disorders had and used in" "common alehouses and other houses called tippling houses," provided that none should keep an alehouse without a licence by two justices of the peace. The principle was afterwards extended to inns, but the licence from the justices continued to be necessary from the time of Edward VI till 1830, when the first Beerhouse Act, 1 Wm. IV, cap. 64, was passed, which allowed any resident occupier of a house to obtain a licence from the excise to sell beer, ale, and porter by retail, and also cider and perry, upon a bond with one surety in a penalty of 20l. In 1834, some restrictions were imposed by 4 and 5 Wm. IV, cap. 85, by dividing licences into two

* Excise licences are required by auctioneers, appraisers and house agents, hawkers and pedlers, patent medicine vendors, sellers of plate, playing card makers, tobacco manufacturers and dealers, and vinegar makers. There are also establishment licences for male servants, carriages, horses, horse dealers, armorial bearings, and licences for brewers, maltsters, dealers and retailers of exciseable liquors, sweet makers, dealers and retailers. The brewers' licence duties are as follows: not exceeding 20 barrels 12s. 6d.; not exceeding 50 barrels 1l. 7s. 6d.; 100 barrels 2l.; 1,000 barrels, for every 50 barrels over 100 the additional sum of 15s.; not exceeding 50,000 barrels in addition to the above, for every 50 barrels over 1,000 additional 14s.; exceeding 50,000, for every 50 barrels additional, 12s. 6d.; beginners 12s. 6d. It should be noted that whilst in other trades the duty in no case exceeds 20l., there are brewers who pay more than 10,000l. for permission to carry on their trade. Tobacco dealers are charged in the same manner as brewers. Malsters according to the quantity made, spirit retailers according to the rent of their premises

classes, 1st, a licence to sell beer to be consumed on the premises, for which a certificate of good character, signed by six householders, was required; and, 2nd, a licence to sell beer not to be consumed on the premises. In 1840, further limitations were imposed by 3 and 4 Vict., cap. 61, by adding a qualification of value in both cases. But in 1860, by the Wine Licensing Act of 23 Vict., cap. 27, every person who keeps an eating house was allowed to take a licence to retail wine and sweets to the extent of less than 2 gallons, or 1 dozen reputed quart bottles at one time, to be consumed on the premises; and the Act 24 and 25 Vict., cap. 91, assimilated still further the condition of a wine licence to that of a publican, by enabling the former to hold an excise licence for the sale of sweets and made wines together, with a licence to sell beer. In 1869, the Wine and Beerhouse Act was passed, 32 and 33 Vict., cap. 27, by which no more licences were to be granted by the justices, and in 1871, the Licence Suspensory Act was passed, the 34 and 35 Vict., cap. 88, which restricted during a limited time the grant of new licences and certificates for the sale of intoxicating liquors by retail. How far have those different measures, now for enlarging, and now for restricting, the liberty of selling spirits and beer, affected the general consumption, we shall see presently.

The consumption of fermented liquors is large in the United Kingdom, though, when spread among the whole population, it is not so great as might be imagined. In England the national beverage is beer. In Scotland it is spirits. In France and Italy wine. What determines the consumption of liquors in different countries it is not easy to state. Custom doubtless has its influence; but more, I imagine, is due to the character of the climate, the nature of the occupations of the people, and the extent of physical exertion usually put forth. The miner and glass-blower consume more beer than the factory labourer, and the factory labourer more than the agricultural labourer. The entire quantity of malt charged with duty in the United Kingdom, in the year ended 31st March, 1870, was 50,700,000 bushels. Calculating that a quarter of malt gives 4 barrels of beer of 36 gallons each, we have a total production of 907,000,000 gallons. Of spirits, British and foreign, there were consumed 30,000,000 gallons, though considerable quantities of them are used for manufacturing purposes, and of wine 15,000,000; making in all 952,000,000 gallons. But let us reduce the quantity to a common denominator of proof spirits. Assuming that 1 quarter of malt gives 13 gallons of spirits, and that the average strength of wine is 30 per cent. of proof spirits, the quantity of proof spirits consumed would be 117,000,000 gallons per annum. The real consumers are not, of course, the whole population. They consist mostly of adult males 15 years and upwards, numbering about

9,500,000; of two-thirds of the adult women, numbering about 7,500,000; and of a tenth of children under 15, half-a-million more; making in all 17,500,000. Divided among these, the consumption per head comes to be 51 gallons of beer, 1.25 gallons of spirits, and 0.85 gallon of wine. Reducing, however, the whole to proof spirits, the consumption is 6.62 gallons per annum, or half-a-gill per day per head among the real consumers; and only 3.78 gallons per annum, or 0.33 gill per day per head among the whole population (Table F).

Of late years there has been an absolute diminution in the quantity of British spirits consumed. From a table appended (Table G), it will be seen that between 1721 and 1791 the average consumption in England was, of spirits 0.62 gallon per head, and of malt 3.76 bushels per head; and between 1791 and 1871 the consumption of spirits was 0.46 gallon per head, and of malt 2.11 gallons per head, showing a reduction in the last eighty years, as compared with the previous eighty years, of 25 per cent. on the consumption of spirits, and 43 per cent. on the consumption of malt. Even within the last fifteen years the decrease is marked. In 1854 the consumption of British spirits per head for all purposes was 0.94. In 1870 it was 0.74. Comparing the quantity consumed as beverage only in 1859 and 1869, the reduction was 18 per cent. in England, 8 per cent. in Scotland, and 9 per cent. in Ireland, or 14 per cent. in the United Kingdom (Table H). It is true that there has been an increase in the consumption of foreign and colonial spirits from 0.19 gallon per head to 0.27 per head; also an increase in the consumption of malt from 1.45 bushel to 1.84 bushel per head; and an increase in the consumption of wine from 0.23 gallon per head to 0.49 gallon, or 113 per cent. But even that does not materially alter the result. It is not by taking the quantities charged with duties on any one year that we can measure any changes in the customs or morals of the nation. That may best be done by taking the quantities charged for a number of years, when any inequality in a single year is corrected. The fruit of recent legislation has evidently been to diminish the consumption of spirits and to increase that of lighter beverages, or, in other words, to change the consumption of alcohol from the more compressed to the more diluted forms, a change which is always attended with beneficial effects on the habits of the people.

But it is said drunkenness is increasing, and of this we have abundant proof, in the scenes which meet us in many of our large towns. Yet there is reason to believe that the morals of the people now are considerably better than they were in former days. The only mode we possess for estimating the extent of drunkenness is by a reference to the number of committals and

convictions given in the “Judicial Statistics,” though that is by no means sufficient or satisfactory, and such facts are available for a comparatively short time since the year 1857. In the first instance, drunkenness itself is not a sufficient test of the extent of drinking habits, since the power of resistance varies with every individual; secondly, drunkenness may have a different effect among different races of people; and thirdly, the sense of propriety which stimulates the committal of the drunkard will probably differ in every town and county. But let us see what the “Judicial Statistics” reveal. Of the 132,000 committals for drunkenness in 1870 in England and Wales, 109,000 were convicted, being in the proportion of 4·95 per 1,000 of the population. This number, however, does not represent so many distinct persons but cases, a large proportion consisting of recommittals for two, three, and even five times and upwards. From facts brought out in a return obtained by Mr. Adderley in 1869, we may take it that about 5 per cent. of the committals came before the police five times and upwards, and 10 per cent. more two or three times. Taking these proportions as a guide, the 109,000 convictions will represent only 66,002 separate persons convicted for drunkenness, or at the rate of 2·98 persons per 1,000 of the population.

Doubtless the increase of committals between 1860 and 1870 from 88,000 to 132,000, showing an increase of 50 per cent., is large (Table I). But where and whence this increase? Let us first distinguish between town and country. The number of committals thus divided stood as follows (Table L):—

	Population of Parliamentary Boroughs.	Number of Committals.	Per 1,000.	Increase per Cent.
1860.....	8,639,000	61,000	7·06	—
'70.....	10,656,000	89,000	8·37	18

	Rural Population.	Number of Committals.	Per 1,000.	Increase per Cent.
1860.....	11,427,000	27,000	2·36	—
'70.....	12,048,000	43,000	3·56	50

The increase, therefore, is larger in the country than in the towns. Not so much, however, in agricultural counties as in mining counties, where a large population has been suddenly gathered, in the receipt of high wages. In the towns the increase is 18 per cent., but that again is principally concentrated in the large towns of Lancashire. In the metropolis, there has been a gradual

decrease. In 1841-50 the proportion was 7·30 per 1,000; in 1861-70 the proportion was 5·57 per 1,000, showing a decrease of 24 per cent. (Table K). The largest increase took place in Lancashire, and nearly the half of it in Liverpool and Manchester alone. Even taking into account the increase of population, the increase of committals in Liverpool was 73 per cent., and in Manchester 353 per cent. (Table L). On closer inquiry, however, we find that whereas ten years ago there was, in Manchester, a large number of refused charges, the proportion being 1,800 out of 4,044 persons taken up by the police, in 1870 the charges refused were only 800 in 11,000. But there are causes in operation which may have led to the increase of committals for drunkenness. The proportion of convictions to committals in England and Wales, which in 1860 was 62 per cent., has risen year by year till, in 1870, it was 82 per cent., and we know how much that may have influenced the police. There is, moreover, a larger police force now in most municipal towns than ten years ago; and if we compare the amount of committals with the number of police and with the area of the different municipal towns, we find that the number of apprehensions bears some analogy to the efficiency of the police. The case of Ireland is very remarkable. With a consumption of spirits, beer, and wine decidedly less than in England and Scotland, the number of committals for drunkenness is considerably in excess of either of these. With a more excitable people, drunkenness manifests itself by greater lawlessness and insubordination.

If there be any increase of drunkenness, it cannot be ascribed to a corresponding increase of public and beerhouses, for in reality the number of such has been decreasing gradually for the last thirty years in relation to population. In 1830-39, there were 6·30 licences issued in the United Kingdom to every 1,000 of the population; in 1860-69, the proportion was only 5·57 per 1,000. In Manchester, where there has been the largest increase of committals, the increase of public and beerhouses was only 6 per cent. beyond the necessary increase for the population; and in Liverpool, there has been an absolute decrease. Nor does it seem that the policy of restriction or free trade in licences has much to do with drunkenness. In Liverpool, where the experiment of free trade has been tried, the result seemed most discouraging; but in Manchester, where it has never been attempted, the state of matters is as bad. Compare Liverpool and Manchester, where there is the largest number of committals, with Nottingham and Macclesfield, which stand among the lowest, and we find the proportion of public-houses to population in the one not much inferior to that in the others. If in Manchester there were 7·18 licensed houses to 1,000 population and in Liverpool 5·17, in Nottingham there were 6·85 licensed houses,

and in Macclesfield 5·44 to 1,000 of the population. "It is not the "multitude of alehouses," said Adam Smith, "that occasions a "general disposition to drunkenness, among the common people, "but that disposition, arising from other causes, necessarily gives "employment to a multitude of alehouses."

For the causes of any increase in drunkenness, we must look to local as well as to general causes. In Manchester there is a great increase, but there are circumstances in the condition of that town which cannot fail to be productive of social disorders. The population is very dense. In 1871, in Leeds there were 13·67 persons per acre; in Liverpool 35·36, and in Manchester 57·95. The number of houses per acre in Leeds was 2·32, in Liverpool 4·71, and in Manchester 10·67. And the number of police per acre was in the proportion of 21 in London and 122 in Manchester. Many of the old factories in Manchester are far from healthy. The homes of the people are wretched. Where husband, wife, and daughters are all in the factories from morning to night, how can there be any comfort at home? Nowhere are there so many earners as in Manchester, and young men and young women, acting quite independently of their parents, spend their earnings in drink, dress, and amusements, with no regard to saving. These are the true causes of the vice and crime of Manchester, and so long as these exist, no other result, whatever be our legislation respecting public-houses, can be anticipated.

It should be observed, moreover, that within the last ten years there has been a great increase in the prosperity of the people. In Manchester this increased prosperity was very sudden in 1866 and 1867, after the American insurrection was quelled, and with it came the sudden increase of the committals. Comparing the number of committals with the exports of cotton goods, which is the staple of the Manchester trade, we have the following striking result:—

	Number of Committals in Manchester.	Quantity of Cotton Exported from the United Kingdom. [000's omitted.]	Amount of Capital in the Savings Banks in Lancashire. [000's omitted.]
		lbs.	£
1860.....	2,329	2,776,	4,084,
1861.....	2,284	2,563,	4,125,
'62.....	3,373	1,681,	3,852,
'63.....	3,206	1,710,	3,842,
'64.....	3,587	1,751,	3,782,
'65.....	3,679	2,014,	3,543,
1866.....	5,639	2,575,	3,642,
'67.....	9,742	2,832,	3,764,
'68.....	9,540	2,977,	3,927,
'69.....	11,461	2,866,	4,065,
'70.....	11,083	3,266,	4,965,*

* Including post office savings banks.

And with this increase of prosperity the consumption of everything now is larger than it was ten or fifteen years ago. Of tea, in 1856, there was consumed 2·26 lbs. per head; in 1870, 3·81 lbs. per head. Of sugar, in 1856, there was consumed 27·24 lbs.; in 1870, 41·93 lbs. per head. Of foreign butter, 1·05 lbs. in 1856; 4·15 lbs. in 1870. But it is so throughout the country. The trade of the United Kingdom increased from 311,700,000*l.* in 1856, to 547,000,000*l.* in 1870. Can we wonder then if, when wages are higher and everything is prosperous, the consumption of spirits, beer, and wine increases also?

There is no evidence to prove that the increased number of committals for drunkenness has been attended with a corresponding increase of crime. There has been a decided decrease in late years of the heavier crimes. In 1850, there were 1·50 per 1,000 of the population committed for trial to sessions and assizes; in 1870 the number was only 0·80 per 1,000, showing a decrease, in twenty years, of 46 per cent. In the last ten years there has been an increase in the number of cases determined summarily, to the extent of 21 per cent., but the increase has taken place mainly in breaches of local acts, breaches of ways acts, larceny and vagrancy, which have but little to do with drunkenness.* In assaults, common and aggravated, the increase has been only 6 per cent. In vagrancy, the increase has been 60 per cent. M. Maurice Block, in his excellent work, "*L'Europe Politique et Sociale*," gives us a comparative table of the numbers of cases of shootings, woundings, and stabbings in different countries, per million individuals, and placing against it another table of the quantity of beer and wine consumed in different countries, we find the singular fact that whilst Spain, which consumed 7 gallons of beer and wine per head, had 1,012 cases of wounding per million individuals; the United Kingdom, which consumed 31 gallons per head, had 77 cases of wounding per million of individuals. Doubtless many crimes and offences are committed by criminals whilst in a state of intoxication, but we must go deeper into the motives of human actions, if we will find the real causes of crime. Cupidity, revenge, hatred, concupiscence, are the motive-power of crime. Intoxication is as likely to divert the mind from the commission of the same, as to render the criminal insensible to its consequences.

And how do we stand with pauperism? In 1850, on the 1st January, there were 5·24 per 1,000 of the population paupers; in 1870, at the same date, the proportion was 4·84; and at the 1st January, 1872, there are fewer still. In 1850, the amount of capital at the savings banks was 29,000,000*l.*, or in the proportion of

* Comparing 1860 with 1870, the offences against Local Acts increased from 25,800 to 35,680; Vagrancy from 23,748 to 41,710; offences against Ways Acts from 20,561 to 29,837.

1*l.* 1*s.* per head; in 1870, the amount was 53,000,000*l.*, or in the proportion of 33*s.* per head, showing an increase of 57 per cent. That the savings of the people might be increased by temperance, there is not the slightest doubt. The amount spent in drink is very large, and may be estimated at 88,000,000*l.*,* two-thirds of which, or 60,000,000*l.* at least, are spent by the working classes. In many cases a very large proportion of the income is spent on drink. Yet, with all this, there is no more pauperism or real poverty in England than elsewhere, and probably nowhere else can be found so large a number of working men having incomes and living in the same scale of comfort as the middle classes. The proportion that the cost of drink bears to the cost of living, is not easy to arrive at. Assuming an average expenditure for the whole population at 20*l.* per head, or 600,000,000*l.*, the expenditure in drink would be in the proportion of 14 per cent., and, divided among the whole population, the 88,000,000*l.* are just in the proportion of 3*l.* a-head, or about 2*d.* per day—not a very large amount when we consider the large sums spent on other objects.

But whatever be the views we may entertain regarding the effects of drink and the economic bearing of the present customs of society, the question before us is, ought the legislature to interfere in order to remedy the excessive consumption of fermented liquors, and if so, in what direction should it proceed, and what have been the results of past efforts for the same purpose? During the early part of the reign of George II, drunkenness appears to have been very prevalent in England, and to check it an Act was passed in 1736† imposing high rates and severe penalties, but not many years elapsed before the legislature was compelled to repeal the same.‡ Where there are the propensity and intention to consume an article, the means of obtaining it are easily found. If prohibition or high duties hinder regular trading, smuggling will inevitably be substituted for it. Mr. Cliffe Leslie, in his *Essay on Financial Reform*, in the second series of the “Cobden Club Essays,” said: “The direct repression of intemperance by control of the sale “and purchase of intoxicating liquors, is at length before us as a “problem of practical politics; and we should be in a much better “condition to determine what can be done towards its solution, but “for a misplaced reliance on customs and excise duties to check “their consumption. With an immense number those duties are “wholly ineffective as a restraint on excess. They are so, in the “first place, with persons whose means enable them to drink to “excess without any considerable sacrifice of other enjoyments;

* See my report to Mr. Bass on the Wages and Earnings of the Working Class (John Murray), p. xlii.

† 9 Geo. II, cap. 23.

‡ 16 Geo. II, cap. 8.

“and they are equally so with those who are ready to sacrifice everything else for strong drink, and whom high price causes to forego other things—not the strong drink. Moreover, every rise in wages and general wealth, *pro tanto*, neutralises whatever limitation to its consumption the rise of prices caused by a tax may be supposed to create. To be logical, those who would diminish intemperance by high prices, ought to be equally ready to do so by diminishing the producing power of consumers, and should oppose every measure tending to augment the general wealth of the nation. Further, the duties on strong drinks lead to methods of adulteration, which provoke an increased craving for them; and they are partially baffled, moreover, and to no small extent, by illicit distillation.”

Another important step in the direction of legislative enactments to discourage the consumption of fermented liquors, was the well-known “Forbes Mackenzie’s Act,”* passed for Scotland in 1853, the object of which was to prevent grocers from selling spirits, to limit the number of hours for the keeping open of public houses, and to prohibit the sale of liquors on Sunday, except to lodgers and *bonâ fide* travellers. The working of the Act having given rise to much diversity of opinion, a royal commission was appointed, in 1859, to inquire into the subject, and the report was favourable to the same, establishing the fact that there was less intemperance in Scotland in consequence of it. It should be remembered, however, that almost simultaneously with the passing of that Act, the spirit duties were assimilated in England and Scotland, and that, consequently, smuggling from Scotland to England greatly diminished. Hence, as compared with previous years, the consumption seemed to have decreased sensibly. But since 1856, there has been again a gradual increase in the consumption of spirits in Scotland. In 1855, the consumption of British, foreign, and colonial spirits in Scotland averaged 1·89 gallon per head. In 1870 the consumption was 1·83 per head, being a reduction of only 3 per cent.; whilst the consumption of malt has increased from 0·54 bushel in 1856, to 0·74 bushel per head 1870, showing an increase of 37 per cent.; and the consumption of wine increased from 0·22 gallon per head in 1859, to 0·30 gallon in 1869, being an increase of 36 per cent. Probably there is as much alcohol consumed in Scotland now, per head of the population, as there was before the passing of the Forbes Mackenzie Act. What the Forbes Mackenzie Act seems really to have accomplished, is a reduction in the number of committals, especially on Sundays. In the city of Edinburgh the number of persons taken charge of by the police for drunkenness in 1852, was 6,367; in 1870 it 1,783. On Sundays, in 1852,

* 16 and 17 Vict., cap. 67.

729; in 1870, 151. On Mondays, in 1852, 776; in 1870, 210. And this result has been accomplished, whilst the number of licences granted for the sale of excisable liquors was reduced only from 884 in 1854, to 837 in 1870; a reduction in reality only apparent, since the 837 of 1870 are considerably larger in capacity than the 884 in 1854.

Another experiment, however, of still greater magnitude was attempted last Session by Mr. Bruce's bill, which proposed to deal summarily with the sale of intoxicating drink. Assuming that the large interest connected with it, depended entirely on the will of the legislature, the bill provided that all existing licences should expire in ten years, and that at that time only a limited number of licences should be granted to the highest bidders, the number of licences being on the basis, as near as possible, of one licence to 1,000 of the population. How would that bill have operated? Had it passed into law as many as 53,000 public and 43,000 beerhouses would have lost their licences, and with them the large amount of money invested in the leases and goodwill would have been immediately imperilled. An absolute rule, fixing the number of public-houses in proportion to population would be of impossible application, since the great thoroughfares and market places would always necessitate more licences than would be required for the residents in the district. And what of the sale to the highest bidder of a licence to trade? The monopoly so much complained of at this moment would have been thereby immensely aggravated. The measure was essentially wrong in principle, and of almost impossible application. For the interests of temperance, I am by no means certain that a reduction of the number of public-houses is much to be desired. The fewer there are of them the larger they are likely to be, and the larger they are, the greater will be the temptation thereby afforded. On the other hand, the Permissive Prohibitory Bill seems inherently faulty, in permitting a majority, of any district, to interfere with the wishes and comforts of the minority, and would, in all probability, be as inoperative, for any good purpose, since the prohibition would only drive those who are intent to use such liquors to the nearest quarter where they may be had. It is wasting the precious time of Parliament, to press before the legislature measures so essentially erroneous.

What is to be complained of in connection with this subject is, not so much the production and sale of the article, as the abuses connected with it. Why, may we ask, should public and beerhouses be allowed to be opened so late at night, long after the great majority of shops are closed, and after the streets are almost deserted? A large proportion of committals for drunkenness takes place after that hour. Why should public-houses be allowed to

open on Sunday, when all other business ceases, except indeed for very few hours, in deference to the habits of the people? Mr. Ryland's bill of last Session deserves consideration. Are the penalties connected with offences against the Licensed Victuallers' Acts sufficiently heavy? Is drunkenness properly repressed and stigmatised? Why are drunkards, in most cases, only fined and not punished by imprisonment? These are matters strictly within the power of the legislature. In any effort for the enactment of police regulations against crime and offences contrary to public order and morals, Her Majesty's Government may count upon the support of the whole nation, but when it endeavours to legislate in favour of a controverted policy, when it attempts to deal with the private interests of a large class of the community, we must not be surprised if it meet with opposition. For my part, after having given the most earnest attention to the subject, out of regard to the interest at stake, to the number of persons employed in the production and sale of intoxicating drinks, and, above all, to the interests of temperance, I am convinced that absolute freedom of trade, or the abolition of all licences, would be preferable to any system of restriction.

One thing may be done safely—it is to wait and see the further operation of Sir Selwyn Ibbetson's Act, under which the number of licences has already been reduced from 124,173 in 1869, to 116,759 in 1871, and the number of beerhouses from 48,967 in 1869, to 42,607 in 1871. Supposing the Suspensory Act passed in 1871 were further renewed. By the combined action of that measure and the increment of population, the number of licences may be reduced considerably without touching existing interests. In 1870 there were 5.28 licences per 1,000 of the population. To maintain that proportion with the annual increase of the population, it would be necessary to increase the number of licences by 1,300 a-year. Not to make such increase, is equivalent to effecting a decrease to that extent; and certainly this method would be less objectionable than interfering with the licences already granted.

The advocacy of temperance is a noble one. Its champions deserve our highest admiration and support. It is a holy cause. I know how fatal is the vice of drunkenness to the comforts of home, and to the peace and prosperity of families. I know how it destroys the brightest prospects of youth, and what moral degradation it brings on many even of the middle and higher classes of life. I fully sympathise with much that is said on the economical evil of so large a sum spent in drink. I would enforce all the entreaties of the moral reformer as he enters the homes of the working classes and conjures our workmen and artisans to use their wages to better purposes than to expend them all, or in so large

a proportion, on drink. But all this must be the result of private effort. The law is powerless when individual example and precept are all powerful. And let it not be conceived that temperance can ever be effectually promoted by merely shutting the public-houses. The dwelling houses of the poor must be improved. The habits of saving must be better inculcated. The conditions of labour must be improved. Education must be extended. Better facilities for innocent recreation must be afforded. Temperance is the fruit, not of one reform only, but of the combined operation of many improvements. If we differ as to the limits of Government interference in the sale of fermented liquors, we are at one in the great object to be accomplished—the promotion of temperance among the people.

APPENDIX.

TABLE A.—Amount of Capital Engaged in the Production of Fermented Liquors.

	Capital Employed.	
	Fixed.	Floating.
	£	£
BEER—		
Freehold and buildings, utensils and machinery, casks, horses, drays, &c.	12,400,000	—
<i>Raw Materials—</i>		
6,200,000 qrs. barley, at 36s. per qr. (Table M)	—	11,200,000
600,000 cwts. hops „ 5 <i>l.</i> per cwt.	—	3,000,000
350,000 „ sugar „ „ „ „	—	500,000
Cost of malting 6,200,000 qrs., at 5 <i>s.</i> per quar. }	—	10,800,000
„ brewing „ 30 <i>s.</i> „ „ }	—	6,500,000
Malt duty	—	—
	12,400,000	32,000,000
BRITISH SPIRITS—		
Freehold and buildings, utensils and machinery, casks, drays, horses for both distilling and rectifying, at 4 <i>l.</i> per 100 qrs., 1,300,000 qrs. }	5,200,000	—
<i>Raw Material—</i>		
1,300,000 qrs. barley and other grain, } at 33 <i>s.</i>	—	2,100,000
Charge for distilling and rectifying, wages, seeds, &c., 26,000,000 galls. distilled, at 1 <i>s.</i> per gall.	—	1,300,000
Spirits duty.....	—	11,000,000
	5,200,000	14,400,000
FOREIGN SPIRITS, Quantity Imported—		
5,232,000 galls. rum, at the declared value of	—	600,000
3,937,000 „ brandy „ „	—	1,248,000
1,940,000 „ other sorts „ „	—	147,000
Importers' charges and profits, 6 <i>d.</i> per gall.	—	275,000
Spirits duty	—	4,330,000
	—	6,600,000
WINE, Quantity Imported—		
17,000,000 gals., at the declared value of	—	5,250,000
Importers' charges and profits, 6 <i>d.</i> per gall.	—	430,000
Wine duty	—	1,520,000
	—	7,200,000
GLASS BOTTLE AND CORK MANUFACTURE—		
Lease, fixtures, machinery, &c., of establishments	500,000	—
Raw material and wages	—	5,000,000
Licence duties of brewers, malsters, distillers, } rectifiers	—	430,000
Total	18,100,000	65,630,000

TABLE B.—*Certificated Sales—Prices of Public Houses.*

THE METROPOLIS.

In the years 1866, 1867, and 1868, the years already referred to in Dr. Levi's paper, we sold taverns and public-houses, of which the total amount of the purchase money, exclusive of stock, was 977,386*l.* 10*s.*

This amount included—

	£	£
58 houses, the purchase-moneys for which were under 1,000	—	—
35 " "	from 1,000 to	2,000
62 " "	" 2,000 "	3,000
40 " "	" 3,000 "	4,000
34 " "	" 4,000 "	5,000
46 " "	" 5,000 "	10,000
10 " "	above 10,000 "	20,000
1 " "	20,000 "	40,000
—		
286		
—		

And this total divided into the above amount of 977,386*l.* 10*s.*, makes an average of 3,417*l.* 8*s.* for each house.

These houses were all *within* the metropolitan district.

DANIEL CRONIN AND SONS,
1, Vernon Place, W.C.

7th February, 1872.

COUNTRY.

Prices realised for lease, goodwill, and fixtures of public-houses and beerhouses in the following towns during the last two years (1870 and 1871), so far as could be ascertained :—

<i>Public-houses—</i>	£	£	Average. £
Liverpool	100 to	2,000	400
Manchester	—	—	500
Birmingham	100 "	4,000	500
Dublin city	500 "	2,500	1,200
Bristol	500 "	600	500
Cork	150 "	500	350
Newcastle	80 "	500	250
Hull	314 "	474	350
<i>Beerhouses—</i>			
Birmingham	—	—	130
Bristol	—	—	150
Hull	—	—	40

TABLE C.—*Amount of Capital Engaged in the Distribution and Sale of Fermented Liquors.*

	Capital Employed.	
	Fixed.	Floating.
WINE AND SPIRIT DEALERS, BOTTLERS, &c.—	£	£
5,894 licences granted to dealers, representing in round numbers 6,000 warehouses, at 500 <i>l.</i> each for lease, fixtures, &c.}	3,000,000	—
100,000 men, at 40 <i>l.</i> per annum	—	4,000,000
PUBLIC-HOUSES—		
140,000 houses in the country, at 300 <i>l.</i>	42,000,000	—
10,000 houses in the metropolis, 1,500 <i>l.</i>	15,000,000	—
Wages of 300,000 persons employed, at 40 <i>l.</i>	—	12,000,000
Licence duties for dealers and retailers of beer, spirits and wine	57,000,000	12,000,000
	—	1,200,000
Total	60,000,000	17,200,000

TABLE D.—*Estimate of the Number of Persons Employed in the Liquor Trades.*

In the production of barley	60,000
„ hops.....	12,000
In malting and brewing	66,000
„ distilling and rectifying	6,000
„ the manufacture of cork and glass bottles	2,000
„ the bottling of beer, spirits, and wine, in engineering, coopering, &c.}	100,000
„ public houses	600,000
	846,000
Dependants on such, about	654,000
Total	1,500,000

TABLE E.—*Revenue Derived from Spirits, Malt, Wine, and Licences for the Last Ten Years.*

[000's omitted.]

Year ended 31st March.	British Spirits.*	Malt.*	Wine.†	Foreign and Colonial Spirits.†
	£	£	£	£
1861	9,242,	5,066,	1,145,	2,624,
'62	9,667,	6,177,	1,104,	2,649,
'63	9,442,	5,568,	1,137,	2,703,
'64	9,762,	6,499,	1,242,	2,993,
'65	10,191,	6,582,	1,318,	3,303,
'66	10,489,	6,802,	1,407,	3,505,
'67	11,073,	6,904,	1,391,	4,174,
'68	10,510,	6,575,	1,469,	4,298,
'69	10,551,	6,724,	1,521,	4,331,
'70	10,969,	6,484,	1,477,	4,191,
'71	11,464,	6,978,	1,535,	6,584,

Licences.

Year ended 31st March.	Common Brewers.*	Malsters.*	Distillers, Rectifiers, Makers of Stills.	Spirit Dealers*	Spirit Retailers.*	Beer Dealers.*	Beer Retailers.*	Wine.*
	£	£	£	£	£	£	£	£
1861....	82,433	18,737	3,681	42,973	536,773	7,717	210,360	101,003
'62....	79,066	17,641	3,691	47,480	540,062	8,413	301,727	108,533
'63....	303,367	18,260	3,679	49,210	545,333	8,158	340,679	113,574
'64....	352,083	17,273	3,660	52,176	564,929	11,428	329,025	119,599
'65....	377,561	18,399	3,583	55,720	574,432	13,876	335,074	126,457
'66....	383,837	17,700	3,527	59,108	590,742	17,425	347,602	136,516
'67....	439,451	17,772	3,593	63,842	603,556	20,739	357,760	145,972
'68....	391,931	17,049	3,706	70,064	621,537	23,796	367,246	154,625
'69....	395,625	16,567	3,685	75,180	636,534	26,625	376,823	163,640
'70....	364,836	15,549	3,285	76,043	537,543	26,297	345,405	170,801
'71....	415,472	16,139	3,336	83,927	647,558	27,923	343,439	103,732

* From the "Report of the Commissioners of Inland Revenue from 1856 "to 1869," for the years 1860-69, and from the "Return of Taxes and Imposts," 456 of 1870.

† From "Statistical Abstract," 1855-69, for years ended 31st December.

TABLE F.—*Consumption per Year and Day of Fermented Liquors in the United Kingdom, 1870.*

	England.		Scotland.		Ireland.		United Kingdom.	
	Gallons per Year.	Gills per Day.	Gallons per Year.	Gills per Day.	Gallons per Year.	Gills per Day.	Gallons per Year.	Gills per Day.
British Spirits	0·90	0·07	3·05	0·26	1·64	0·14	1·25	0·10
Foreign and Colonial	0·54	0·04	0·39	0·03	0·11	0·01	0·46	0·04
Malt	64·00	5·61	24·00	2·10	17·00	1·49	51·00	4·47
Wine	0·99	0·08	0·55	0·07	0·49	0·04	0·85	0·07
	66·43	5·80	27·99	2·46	19·24	1·68	53·56	4·68
Or, in proportion } to the whole po- pulation	37·78	3·30	15·72	1·37	10·88	0·95	31·27	2·74

Or, calculated by the same denominator, viz., the quantity of proof spirits, as follows:—

	England.		Scotland.		Ireland.		United Kingdom.	
	Gallons per Year.	Gills per Day.	Gallons per Year.	Gills per Day.	Gallons per Year.	Gills per Day.	Gallons per Year.	Gills per Day.
British Spirits	0·90	0·07	3·05	0·26	1·64	0·14	1·25	0·10
Foreign and Colonial	0·54	0·04	0·39	0·03	0·13	0·01	0·46	0·03
Malt	5·79	0·50	2·20	0·19	1·57	0·13	4·69	0·41
Wine	0·29	0·02	0·28	0·01	0·16	0·01	0·22	0·01
	7·52	0·63	5·92	0·49	3·50	0·29	6·62	0·55
Or, in proportion } to the whole po- pulation	4·28	0·37	3·23	0·28	1·93	0·16	3·78	0·33

TABLE G.—Consumption of Spirits and Malt in England and Wales. (From the Report of the Commissioners of Inland Revenue.)

[000's omitted from the population and quantities.]

	Population.	Quantity of Spirits.	Per Head.	Bushels of Malt.	Per Head.
		Galls.	Galls.		
1721	6,061,	2,792,	0·46	28,587,	4·71
'31	6,151,	4,334,	0·70	25,833,	4·19
'41	6,243,	7,439,	1·18	20,141,	3·22
'51	6,335,	7,050,	1·11	26,994,	4·26
'61	6,825,	3,186,	0·46	28,929,	4·23
'71	7,352,	2,495,	0·33	21,961,	2·98
'81	7,921,	2,114,	0·26	26,718,	3·37
'91	8,533,	4,073,	0·47	27,076,	3·17
1801	9,060,	2,556,	0·28	18,005,	1·98
'11	10,322,	4,776,	0·46	25,982,	2·51
'21	12,105,	4,125,	0·34	26,138,	2·15
'31	13,994,	7,434,	0·53	32,963,	2·35
'41	15,929,	8,167,	0·51	30,956,	1·94
'51	17,983,	9,995,	0·53	34,638,	1·93
'61	20,119,	10,728,	0·53	33,693,	1·67
'71	22,000,	17,141,	0·51	52,929,	2·40
Average—					
1721-91	—	—	0·62	—	3·76
'91-1871	—	—	0·46	—	2·11
Decrease	—	—	25 per cent.	—	43 per cent.

TABLE G contd.—Quantities of Malt and Spirits Charged with Duty, 1830 to 1868.

Malt.

[000's omitted, from the quantities.]

Years.	England.			Scotland.			Ireland.			United Kingdom.	
	Bushels.	Bushels per Head.	Rate of Duty.	Bushels.	Bushels per Head.	Rate of Duty.	Bushels.	Bushels per Head.	Rate of Duty.	Bushels.	Bushels per Head.
31st Dec.											
325.....	29,573,	2·29	2/7*	3,926,	1·78	2/7*	2,707,	0·37	2/7*	36,205,	1·62
'30.....	26,901,	1·95	„	4,102,	1·74	„	1,960,	0·25	„	32,962,	1·38
'35.....	36,079,	2·45	„	4,460,	1·80	„	2,354,	0·29	„	42,892,	1·70
'40.....	36,653,	2·33	„	4,397,	1·68	„	1,406,	0·17	„	42,457,	1·60
'45.....	30,509,	1·82	„	4,353,	1·58	„	1,684,	0·17	„	36,546,	1·31
'50.....	34,423,	1·93	„	4,639,	1·61	„	1,682,	0·24	„	40,745,	1·48
31st Mar.											
356.....	30,703,	1·63	4/-	1,631,	0·54	4/-	1,191,	0·19	4/-	33,524,	1·20
'60.....	40,715,	2·04	2/7*	1,601,	0·52	2/7*	2,249,	0·42	2/7*	44,564,	1·55
'65.....	43,956,	2·09	„	2,093,	0·66	„	2,490,	0·44	„	48,538,	1·63
'70.....	45,351,	2·07	„	2,381,	0·74	„	2,965,	0·53	„	50,697,	1·65
'71.....	47,066,	2·10	„	2,698,	0·83	„	3,165,	0·57	„	52,929,	1·70

* And 5 per cent. additional.

TABLE G.—Quantities of Malt and Spirits Charged with Duty—Contd.
British Spirits.

Years.	England.			Scotland.		
	Gallons. [000's omitted.]	Gallons per Head.	Rate of Duty.	Gallons. [000's omitted.]	Gallons per Head.	Rate of Duty.
To 31st Dec.						
1825.....	3,684,	0·28	11/8 1/4	5,982,	2·71	2/4 3/4 $\frac{5}{28}$
'30.....	7,732,	0·56	7/- 7/6	6,008,	2·56	2/10 3/- 3/4
'35.....	7,315,	0·49	7/6	6,014,	2·12	3/4
'40.....	8,278,	0·52	7/6 7/10	6,180,	2·37	3/4 3/8
'45.....	9,076,	0·54	7/10	6,441,	2·34	3/8
'50.....	9,322,	0·51	7/10	7,123,	2·48	3/8
To 31st Mar.						
1856.....	10,123,	0·59	7/10 8/-	5,637,	1·81	6/- 7/10 8/-
'60.....	12,904,	0·64	8/- 8/1	5,581,	1·82	8/- 8/1 10/-
'65.....	11,197,	0·53	10/-	5,030,	1·60	10/-
'70.....	11,591,	0·53	10/-	5,364,	1·67	10/-

Years.	Ireland.			United Kingdom.	
	Gallons. [000's omitted.]	Gallons per Head.	Rate of Duty.	Gallons. [000's omitted.]	Gallons per Head.
To 31st Dec.					
1825.....	9,263,	1·29	2/4 3/4 $\frac{5}{28}$	18,922,	0·84
'30.....	9,005,	1·27	2/10 3/- $\frac{3}{4}$	22,744,	0·95
'35.....	11,381,	1·43	2/4	24,710,	0·98
'40.....	7,401,	0·90	2/4 2/8	21,859,	0·82
'45.....	7,605,	0·91	2/8	23,123,	0·83
'50.....	7,408,	1·07	2/8	23,863,	0·86
To 31st Mar.					
1856.....	6,509,	1·08	4/- 6/- 6/2	22,269,	0·86
'60.....	5,950,	1·02	8/- 8/1 10/-	24,435,	0·85
'65.....	4,157,	0·73	10/-	20,383,	0·68
'70.....	5,025,	0·90	10/-	21,981,	0·71

Foreign Spirits—Brandy and Geneva, and other sorts.

Years to 31st December.	England.		Scotland.		Ireland.		United Kingdom.
	Gallons.	Rate of Duty.	Gallons.	Rate of Duty.	Gallons.	Rate of Duty.	Gallons.
1830.....	1,267,	22/6	39,	22/6	10,	22/6	1,317,
'35.....	1,286,	"	41,	"	22,	"	1,349,
'40.....	1,081,	22/10	36,	22/10	14,	22/10	1,131,
'45.....	1,020,	"	41,	"	20,	"	1,081,
'50.....	1,768,	15/-	88,	15/-	47,	15/-	1,903,
'55.....	1,439,	"	78,	"	49,	"	1,565,
'60.....	1,549,	8/6 10/5	156,	8/6 10/5	87,	8/6 10/5	1,793,
'65.....	2,645,	10/5	219,	10/5	169,	10/5	3,034,
'70.....	3,872,	10/5	360,	10/5	322,	10/5	4,554,

TABLE G.—Quantities of Malt and Spirits Charged with Duty—Contd.

Foreign and Colonial Spirits—Rum.

[000's omitted from the quantities.]

Years to 31st December.	England.		Scotland.		Ireland.		United Kingdom.
	Gallons.	Rate of Duty.	Gallons.	Rate of Duty.	Gallons.	Rate of Duty.	Gallons.
1830.....	3,563,	9/-	137,	9/-	19,	9/-	3,659,
'35.....	3,285,	,,	105,	,,	26,	,,	3,417,
'40.....	2,445,	9/4	554,	9/4	12,	9/4	2,513,
'45.....	2,412,	,,	243,	,,	14,	,,	2,169,
'50.....	2,535,	8/2	201,	4/0	166,	3/-	2,902,
'55.....	3,018,	,,	115,	5/2	90,	6/4	3,224,
'60.....	3,481,	8/3 10/2	163,	8/3 10/2	84,	8/3 10/2	3,729,
'65.....	3,415,	10/2	203,	10/2	80,	10/2	3,698,
'70.....	3,469,	10/2	266,	10/2	117,	10/2	3,852,

Note.—In calculating the real consumption of malt and spirits in the United Kingdom, several circumstances must be taken into account. 1st. Since the 14th August, 1853, malt has been made duty free for distillery purposes, and the greater portion of malt made in Scotland is so used. 2nd. A considerable quantity of malt is exported on drawback, which in 1868-69 was 345,987 bushels. 3rd. A considerable quantity of sugar is used by brewers, which in the year ended 31st March, 1870, was 295,862 cwts.,—equivalent, at the rate of 210 lbs. per quarter of malt, to 1,262,351 bushels. In the earlier years scarcely any of these circumstances were in operation.

Total Consumption—British, Foreign, and Colonial.

Years.	England.		Scotland.		Ireland.		United Kingdom.	
	Gallons. [000's omitted.]	Gallons per Head.	Gallons. [000's omitted.]	Gallons per Head.	Gallons. [000's omitted.]	Gallons per Head.	Gallons. [000's omitted.]	Gallons per Head.
1830....	12,503,	0·90	5,183,	2·62	9,034,	1·17	27,720,	1·16
'35....	12,287,	0·83	6,160,	2·49	11,429,	1·43	29,876,	1·18
'40....	11,804,	0·75	6,271,	2·41	7,428,	0·91	25,504,	0·95
'45....	12,508,	0·74	6,325,	2·30	7,639,	0·92	26,472,	0·95
'50....	13,334,	0·75	7,412,	2·57	7,622,	1·10	28,368,	1·03
'55....	14,842,	0·78	5,536,	1·89	6,368,	1·05	26,746,	0·96
'60....	16,930,	0·85	5,049,	1·65	4,887,	0·83	26,866,	0·93
'65....	17,298,	0·82	5,621,	1·79	4,544,	0·80	27,464,	0·95
'70....	17,900,	0·81	5,867,	1·83	5,384,	0·97	29,151,	0·95

TABLE H.—*Comparison of Consumption, 1859 and 1869.*

	England.		Scotland.		Ireland.	
	1859.	1869.	1859.	1869.	1859.	1869.
	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.
British Spirits	10,474,742	11,591,699	7,255,882	5,364,003	6,704,819	5,024,976
Foreign and Colonial Spirits }	4,752,458	7,047,000	255,712	689,000	255,712	402,000
Malt.....	39,094,653	45,351,518	1,537,876	2,380,545	2,161,520	2,965,396
Wine	5,400,000	12,645,664	675,000	971,499	675,000	1,551,158
	Per Head.		Per Head.		Per Head.	
British Spi-rits—Galls. }	0·77	0·52	2·46	1·67	1·16	0·90
Foreign and Colonial Spirits — Galls. }	0·24	0·32	0·08	0·21	0·03	0·07
Malt—Bush. .	1·99	2·07	0·50	0·74	0·36	0·53
Wine—Galls.	0·24	0·57	0·22	0·30	0·11	0·27

TABLE I.—*Number of Committals and Convictions for Drunkenness in England and Wales.*

	Committed.	Convicted.	Per Cent. Convicted.
1857.....	75,859	44,894	59
'58.....	85,472	51,861	61
'59.....	89,903	56,161	62
'60.....	88,361	57,251	64
'61.....	82,196	54,123	65
'62.....	94,908	63,255	67
'63.....	94,745	64,165	68
'64.....	100,067	68,881	68
'65.....	105,310	72,418	72
'66.....	104,368	75,159	74
'67.....	100,357	74,288	74
'68.....	111,465	83,397	75
'69.....	122,310	93,638	77
'70.....	131,870	109,396	82

TABLE K.—*Number of Committals for Drunkenness within the limits of the Metropolitan Police.*

Years.	Acres.	Population.	Apprehensions for Drunkenness.
1831.....	68,053	1,523,875	31,353
'32.....		1,551,700	32,635
'33.....		1,599,525	29,880
'34.....		1,607,350	19,779
'35.....		1,635,175	21,794
'36.....		1,663,000	22,728
'37.....		1,690,824	21,426
'38.....		1,718,649	21,237
'39.....		1,746,474	21,269
1840.....	440,583	2,084,312	16,505
'41.....		2,117,062	15,006
'42.....		2,161,649	12,338
'43.....		2,206,236	10,890
'44.....		2,250,823	16,474
'45.....		2,295,410	17,361
'46.....		2,339,997	18,705
'47.....		2,384,584	16,874
'48.....		2,429,171	16,461
'49.....		2,473,758	21,027
1850.....	440,583	2,518,345	23,897
'51.....		2,562,932	23,172
'52.....		2,618,514	23,640
'53.....		2,674,096	23,652
'54.....		2,729,679	22,078
'55.....		2,785,261	19,297
'56.....		2,840,843	18,703
'57.....		2,896,425	20,047
'58.....		2,952,007	20,829
'59.....		3,007,590	18,779
1860.....	440,583	3,063,172	18,208
'61.....		3,118,754	17,059
'62.....		3,174,336	18,312
'63.....		3,229,918	17,651
'64.....		3,285,500	18,781
'65.....		3,341,082	19,257
'66.....		3,396,664	18,383
'67.....		3,452,246	16,941
'68.....		3,507,828	18,872
'69.....		3,568,410	21,056
1870.....	440,583	3,618,992	21,625

Note.—The police never interfere with persons who are drunk unless they are disorderly, or incapable of taking care of themselves. There is no specific order to this effect as regards drunken persons, but there are general orders that the police are not to interfere unnecessarily with any persons.

In a case which occurred in September, 1866, a magistrate remarked: "The interference of the police was uncalled for and illegal. The man charged, although drunk, was lying quietly under a door portico, and his wife standing beside him, there was therefore no ground whatever to justify any interference with him by the police."

These arrangements apply only to the metropolitan police district. There are no uniform instructions throughout England and Wales.

TABLE L.—*Number of Committals for Drunkenness in every County in England and Wales in 1860 and 1870.*

	Number of Committals for Drunkenness.		Rate per 1,000.	
	1860.	1870.	1861.	1871.
Bedfordshire.....	120	244	0·88	1·67
Berkshire	384	512	2·18	2·61
Buckingham	377	462	2·24	2·62
Cambridgeshire	133	404	0·75	2·17
Cheshire	3,407	2,114	6·78	—3·76
Cornwall	789	698	2·13	—1·90
Cumberland	1,147	1,038	5·59	—4·71
Derby	873	1,388	2·57	3·64
Devon	1,441	1,369	2·46	—2·27
Dorset	361	489	1·91	2·50
Durham	2,528	5,322	4·97	7·76
Essex.....	188	380	3·46	—0·81
Gloucester	1,096	1,692	2·26	3·17
Hereford	351	505	2·83	4·04
Hertford	233	523	1·34	2·70
Huntingdon	44	78	0·68	1·21
Kent	1,055	1,014	1·43	—1·19
Lancaster	24,238	49,908	9·97	17·70
Leicester	488	702	2·05	2·60
Lincoln	440	530	1·06	1·21
London	21,689	21,209	—	—
Monmouth	491	1,497	2·82	7·67
Norfolk	530	721	1·21	1·64
Northampton	366	635	1·60	2·60
Northumberland	1,684	2,856	4·90	7·38
Nottingham	675	892	2·29	2·78
Oxford	277	419	1·61	2·35
Rutland.....	15	35	3·68	—1·59
Salop	1,062	1,566	4·40	6·31
Somerset	826	719	1·85	—1·55
Southampton	972	1,575	2·01	2·99
Stafford.....	3,655	4,742	4·89	5·53
Suffolk	394	487	1·16	1·39
Surrey	199	459	0·23	0·42
Sussex	398	644	1·09	1·54
Warwick	2,102	2,911	3·73	4·58
Westmoreland	167	238	2·73	3·66
Wilts.....	224	464	0·89	1·80
Worcester	810	837	2·63	—2·46
York	8,258	11,773	4·05	4·83

TABLE L *contd.*—*Number of Committals for Drunkenness in the Boroughs of England and Wales in 1861 and 1871.*

(From the "Judicial Statistics.")

	1860.	1870.		1860.	1870.
BEDFORDSHIRE.			DURHAM.		
Bedford	31	48	Durham	183	239
Dunstable	—	14	Gateshead	137	484
Abingdon	13	16	Hartlepool	90	206
Maidenhead	22	37	South Shields	207	815
Newbury	—	46	Sunderland	618	663
Reading	70	154	ESSEX.		
Windsor	137	95	Colchester	56	51
BUCKINGHAMSHIRE.			Maldon	8	17
Buckingham	16	13	GLOUCESTER.		
Chipping Wycombe	9	19	Bristol	587	1,042
CAMBRIDGESHIRE.			Hereford	164	212
Cambridge	38	68	Leominster	15	22
Isle of Ely	74	157	HERTFORD.		
Wisbech	—	72	Hertford	24	26
CHESHIRE.			St. Albans	37	35
Birkenhead	918	386	HUNTINGDON.		
Chester	225	380	Huntingdon	44	78
Congleton	80	44	KENT.		
Macclesfield	85	127	Kent	257	326
Stockport	554	703	Canterbury	13	31
CORNWALL.			Deal	32	30
Bodmin	4	—	Dover	144	167
Falmouth	22	30	Faversham	28	—
Helston	—	26	Folkestone	—	14
Launceston	12	3	Gravesend	290	164
Liskeard	18	16	Hythe	—	20
Penryn	7	9	Maidstone	30	43
Penzance	45	61	Margate	37	36
St. Ives	1	7	Ramsgate	14	44
Truro	49	82	Rochester	158	61
CUMBERLAND.			Tenterden	6	6
Carlisle	237	162	Sandwich	10	1
DERBY.			Tunbridge Wells ...	36	71
Chesterfield	49	210	LANCASTER.		
Derby	204	320	Ashton	195	642
Glossop	—	41	Blackburn	1,198	966
DEVON.			Bolton	833	941
Barnstaple	19	30	Lancaster	141	50
Bideford	18	20	Liverpool	10,963	21,113
Devonport	45	91	Manchester	2,329	11,083
Exeter	65	34	Oldham	353	517
Plymouth	396	352	Preston	825	719
Southampton	10	4	Rochdale	287	790
Tiverton	27	21	Salford	609	1,611
Torrington	1	16	Southport	—	87
Totnes	4	7	Stalybridge	259	351
DORSET.			Warrington	274	565
Blandford	8	15	Wigan	478	473
Dorchester	48	19	LEICESTER.		
Poole	52	25	Leicester	264	348
Weymouth	117	69			

TABLE L.—*Committals for Drunkenness in the Boroughs of England and Wales—Contd.*

	1860.	1870.		1860.	1870.
LINCOLN.			STAFFORD— <i>Contd.</i>		
Boston	124	74	Wolverhampton	487	478
Lincoln	156	190	SUFFOLK.		
Grantham	19	20	Ipswich	112	139
Stamford	68	62	Southwood	—	4
MIDDLESEX.			Suffolk, West	101	184
Metropolis	21,340	20,813	Sudbury	11	7
City	349	396	SURREY.		
MONMOUTH.			Godalming	5	9
Monmouth	40	62	Guildford	43	108
Newport	190	412	SUSSEX, EAST.		
NORFOLK.			Brighton	92	196
King's Lynn.....	30	124	Hastings	54	44
Norwich	167	74	Hove	6	11
Great Yarmouth ...	137	115	Rye	5	9
NORTHAMPTON.			SUSSEX, WEST.		
Peterborough	8	53	Arundel.....	8	25
Daventry	19	11	Chichester.....	10	38
Northampton	135	161	WARWICK.		
NORTHUMBERLAND.			Birmingham.....	1,256	2,244
Berwick	62	81	Coventry	256	105
Newcastle	782	1,626	Leamington	56	71
Tynemouth	570	390	Stratford	30	17
Tyne River	1	1	Warwick	58	57
NOTTINGHAM.			WESTMORLAND.		
Newark	39	13	Kendal	90	143
Nottingham	198	177	WILTS.		
OXFORD.			Salisbury	129	65
Banbury	25	33	WORCESTER.		
Oxford	8	93	Bewdley	1	6
SALOP.			Droitwich	13	20
Bridgnorth	50	26	Kidderminster	69	65
Ludlow	39	60	Worcester.....	306	169
Oswestry	66	—	YORK, EAST RIDING.		
Shrewsbury	299	127	Beverley	58	16
SOMERSET.			Hull	880	794
Bath	134	223	YORK, WEST RIDING.		
Bridgewater	3	38	Bradford	136	591
Chard	3	7	Dewsbury	—	256
SOUTHAMPTON.			Doncaster.....	107	152
Basingstoke	—	30	Halifax	170	133
Newport	39	66	Huddersfield.....	381	619
Portsmouth	300	257	Leeds.....	926	1,940
Ryde	—	46	Pontefract.....	39	46
Romsey	7	—	Ripon	19	19
Southampton	232	422	Sheffield	921	1,260
Winchester	26	43	Wakefield	165	224
STAFFORD.			YORK, N. RIDING.		
Lichfield	31	106	Middlesbrough.....	269	615
Newcastle-under- } Lyne	227	213	Richmond.....	12	11
Walsall	141	156	Scarborough	79	315
			York	325	292

TABLE L.—Committals for Drunkenness in the Boroughs of England and Wales—Contd.

	1860.	1870.		1860.	1870.
ANGLESEY.			FLINT.		
Beaumaris.....	—	—	Flint	8	—
BRECON.			GLAMORGAN.		
Brecon	79	—	Cardiff	368	472
CARMARTHEN.			Neath	60	172
Carmarthen	92	38	Swansea	281	307
CARNARVON.			PEMBROKE.		
Pwllheli.....	13	40	Haverdon	27	34
Denbigh	263	285	Tenby	22	27

TABLE L contd.—Drunkenness in the Army.

	England.	Scotland.	Ireland.	United Kingdom.
	Per cent.	Per cent.	Per cent.	Per cent.
1850	0·78	0·97	2·57	1·32
'51	0·91	1·30	1·85	1·25
'52	0·71	2·05	2·10	1·25
'53	0·59	1·01	1·95	1·04
'54	0·42	0·82	1·20	0·66
'55	0·35	0·38	0·77	0·49
'56	1·08	0·17	1·33	1·12
'57	1·21	0·81	1·98	0·82
'58	0·49	0·13	0·69	0·53
'59	0·53	0·56	0·84	0·61
1860	0·74	0·34	0·84	0·75
'61	0·96	0·22	0·43	0·79
'62	1·24	0·22	0·61	1·47
'63	1·30	0·77	0·54	1·09
'64*	1·83	0·68	0·50	1·44
'65*	2·86	1·39	0·66	2·24
'66*	3·06	2·13	0·94	2·41
'67*	2·81	1·33	1·11	2·28
'68*	3·12	0·43	1·60	2·64
'69	1·45	0·28	0·63	1·20

* In these years, soldiers who formerly were summarily convicted, and sentenced to short periods of imprisonment in regimental cells by their commanding officer for drunkenness, were then tried by court martial and sentenced to imprisonment in a military prison; thus causing a considerable augmentation in the number of committals for that offence. The decrease in 1869 is accounted for by the alteration in the articles of war of that year, which make this crime punishable by fine, except in cases of habitual and aggravated drunkenness, when punishment by imprisonment is awarded in addition to fine.

TABLE L *contd.*—*Number of Committals for Drunkenness.*

<i>Lancashire</i> —	Per 1,000.
Liverpool	47·56
Manchester	32·75
<i>Yorkshire</i> —	
Leeds	9·36
Bradford	5·56
<i>Northumberland</i> —	
Newcastle	15·75
South Shields	23·14
<i>Capitals</i> —	
London	5·57
Edinburgh	9·09
Dublin	73·0
England and Wales	5·81
Ireland	52·0

TABLE M.—*Average Price of Barley.*

	Per Imperial Quarter.
	s. d.
1860	36 7
'61	36 1
'62	35 1
'63	33 11
'64	29 11
'65	29 9
'66	37 5
'67	40 —
'68	43 —
'69	39 5
'70	34 7

On PRISON DISCIPLINE and STATISTICS in LOWER BENGAL. By
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[Read before the Statistical Society, 20th February, 1872.]

CONTENTS :

	PAGE		PAGE
I.—Introduction	57	V.—Labour and Employment of Convicts	73
II.—Castes and Classes of Cri- minals in Bengal.....	59	VI.—Education.....	83
III.—Prisoners Committed to Gaol, and their Disposal from, 1865-69	64	VII.—Sickness and Mortality....	84
IV.—Classification of Prisoners	70	VIII.—Concluding Remarks.....	93
		APPENDIX.	
		Tables I to IX	94

I.—Introduction.

IN my two former papers on this subject, which are published in the *Journal of the Statistical Society*,* I reviewed briefly the past history of the prisons of the oldest and most important province of India, and brought the narrative down to the close of 1864.

In the statement which I am now about to submit to the Society, it is my intention to present an equally condensed view of the department which was under my charge to the close of 1869, the latest period for which the returns are in my possession.

I resigned my office towards the end of 1870, having held it for exactly fifteen years. During this lengthened period there were from fifty to sixty prisons under my control, and in them were contained a daily average of nearly 20,000 prisoners. They represented the criminal classes of some forty millions of people, speaking a dozen different dialects, and ranging between the most cultivated of Her Majesty's subjects in India, and aboriginal savages, nearly as low in the scale of civilisation as any wild, uncultivated people known to ethnologists.

The extent and variety of the experience thus acquired entitles me, I believe, to speak with some degree of authority as to the general principles which should govern the management of prisoners, and as to the system of discipline best fitted to secure the immediate object as well as the end of imprisonment, viz., the punishment of crime, and the protection of society.

* Vol. xxv, pp. 175—218; vol. xxx, pp. 21—57.

Two opposite theories of imprisonment have been discussed, and carried into effect. The one, that a prison should be rendered a terror to evil doers by the infliction of as much pain as can be inflicted without injury to health, or risk to life: the other, a graduated system of punishment, from which the direct infliction of physical pain as a cardinal condition of correction is eliminated, and the prisoner is allowed to work his way to freedom and mitigation of sentence, by mere good conduct in gaol.

In the one system, the moral improvement of the prisoner is either altogether ignored, or subordinated so entirely to the object of rendering his prison life burdensome, as to be practically lost sight of. This plan had many, and still has some earnest advocates, but, in my humble judgment, it is founded upon an erroneous view of human nature, and this, in my belief, has caused its failure wherever it has been rigorously enforced.

Solitary confinement, deprivation of all sources of enjoyment, prolonged enforced silence, and their gloomy accompaniments, aimless, dispiriting and exhausting tasks, have produced their natural results in wrecking both body and mind. I am not aware that they have exercised the smallest influence on the criminal classes in diminishing crime, and the reason seems to me to be simple and obvious. Pain is a sensation, and has no immediate connection with a moral sentiment. Pain, again, is confined to the individual, and can scarcely be realised by other persons, even in its active manifestations. The mental and bodily torture of long-continued confinement, unrelieved by a ray of the sunshine of humanity, is never seen by the outer world, and even if witnessed by others whom it is intended to deter, would have no active terrors, for it is altogether a passive state.

• In fact, if this theory be carried to its strictly logical conclusions, the prisoner should be deprived of food, rest, warmth, light, and all the other conditions necessary to the maintenance of life, to the extent that just falls short of immediate and obvious injury to health, and risk to life.

In Norfolk Island the system of severity in its most repulsive form succeeded in converting rational beings into unreasoning fiends, and failed so entirely to deter from the commission of the most appalling crimes, as to lead to its abandonment as a scandal and a reproach to humanity itself.

The other system to which I have referred is more rational and humane; but it errs, I think, in tampering with judicial sentences, and does not sufficiently provide for the reformation of the criminal, and his restoration to society a wiser and a better man.

It may be, and has been argued that the State in assuming the control of an offender is not bound to undertake the duty of

becoming his moral preceptor; and that if it incurred this responsibility, it should, as some philanthropists of our own time and country imagine, undertake the cure of vices of all sorts, those which are beyond the pale of the penal laws, as well as those which, for the protection of society, it punishes.

There is, however, an essential difference in the two cases. The criminal has, by the act for which he has been tried and convicted, forfeited his liberty, and with it all the rights and privileges of citizenship. The State has per-force become his guardian during the period of his compulsory removal from society, and is bound to discharge the trust in the manner most beneficial to him, and to the society to which he is to be restored on the completion of his sentence.

The vices of the free man, on the other hand, could not be controlled by the State without a dangerous interference with the personal liberty which is the birthright of every subject of the British Crown. Hence, all attempts to make men sober and women virtuous by Acts of Parliament, are strongly and properly resisted, so long as private vices are not a source of danger to the commonwealth.

I will endeavour to show in my concluding remarks, how the conversion of prisons into schools of industry, steers a sound and safe middle course between the two extremes of the systems to which I have referred; how it fulfils the immediate object as well as the end of imprisonment; and how it may annually relieve the taxpayers of the United Kingdom of nearly a million of the money now extracted from the pockets of the public, without diminishing the strictness and severity of the punishment which is justly inflicted for all breaches of the criminal law.

For convenience of record and reference I shall arrange this, my concluding paper, in the order adopted in my former papers, illustrating those of my remarks which are susceptible of that mode of treatment, by the statistics of the prisons under my charge. I must again claim your indulgence, *in limine*, for the unavoidable imperfection of treatment which the limits of time and space enforce. To condense the facts and figures relating to the criminals of forty millions of people into the space of an hour would be no easy task, even if I possessed the power of compressing my giant in the jar of the magician immortalised in "The Thousand and One Nights."

II.—*Castes and Classes of Criminals in Lower Bengal.*

For some years I was constantly baffled in attempts to determine the exact castes of prisoners in different parts of Bengal, from the difference of nomenclature used in designating the same castes in different parts of the country. It seemed to me to be desirable, when

I issued instructions with a view to resolve this difficulty, to ascertain how far a direct relation between castes and crimes could be traced, a matter of interest and importance to the legislature in dealing with the hereditary practice of crime as a calling.

It was by the institution of special inquiry in this direction that Thuggee and Dacoity, or gang robbery, were successfully dealt with; and I was of opinion that cattle stealing, cattle poisoning, the crime of arson at certain seasons and in certain districts, river piracy, secret poisoning, the mutilation of children for immoral purposes, domestic slavery, and possibly other crimes equally systematically pursued, might be so investigated as to make their detection and prevention more certain, and regulate the discipline in gaol of such offenders with some regard to their reformation.

Accordingly, in December, 1867, I brought the matter to the notice of the officers in charge of the prisons, and after asking for a list of the names of castes and sects, with the exact signification of each, I added: "It would be extremely interesting also, if you could furnish me with a sketch of the chief crimes of your district, and of the classes by whom they are committed. Your experience as a judicial officer will doubtless afford you the materials for such a sketch."

"There is little information extant in a connected form on the subject, and yet a knowledge of the criminal classes is very necessary to guide us in so framing our system of prison discipline as to make it deterrent, and, if possible, reformatory. The approaching establishment of central gaols, or, as they ought to be called, convict prisons, invests this subject with a peculiar interest at the present time, as in those prisons a far more rigorous and graduated system of discipline can be carried out than is practicable in zillah jails (district prisons).

"The reports of the late Sir William Sleeman on Thuggee and Dacoity are not only full of interest, but have been of the greatest service in dealing with those crimes.

"Those of the Punjab are also extremely valuable. I know of no good reason why Bengal, the oldest and by far the most valuable province of India, should be behind the younger provinces in affording a knowledge of its criminal population, and I hope with your aid to assist in removing the reproach that at present attaches to us in this important branch of judicial knowledge."

In reply I received and printed a large amount of information, some of it exact and valuable, and a great deal of little, if any, value,—yet I did not deem it advisable to suppress any portion of it, as every portion afforded a landmark for future research. The whole question of caste is now in a transition state in India. Near the great centres of government and of education its influence has

been much weakened, and throughout the country it is very gradually losing the semi-sacred character of its original institution, and becoming, to some extent, an indication of the occupation rather than of the social status of an individual. It is a mistake, however, to suppose that among the great body of the people it has yet lost its hold, or that it can be safely disregarded in legislative enactments or executive measures. Since the transfer of the government of India from the East India Company to the Crown, there are indications of too great impatience and of unwise haste in attempting to forge the whole population into one harmonious homogeneous mass, and of civilising them according to western standards—if there be such a thing as a standard of civilization in existence. If it be considered impolitic to attempt to legislate in so advanced a country as England, too far in advance of public opinion, it is still more so in a country where an eclipse is still considered to be the effort of a monster to swallow the moon; and to drive away the dragon whole populations turn out with pot and pan, sackbut and psaltery, and every instrument of harmonious and discordant sounds, to frighten him from his prey: where only a few days since, the natives of the district believed that wise men had come from the west to prevent the falling of the sun, and set fire to the grass to consume the monster that was devouring it: and where even now, in many places, a Hindu will throw away his food and go hungry to bed if the shadow of a crow flits across the cooking pot in which his rice is boiling. It is an entire mistake to suppose that there is no such thing as a public opinion in India. The truth is that we have not yet learnt clearly how to get at it, and are only awoken from our dream of security by a Wahabee conspiracy, or a Kooka revolt, or some less forcible, but not less significant objection to an unpopular and ill-judged tax.

In the gaols of Bengal the privileges of caste are respected in general, but no false plea of caste is permitted to interfere with punishment. With care, tact, and such knowledge of the people committed to his charge as every officer in charge of a prison ought to possess, no general feeling of dissatisfaction is likely to arise or to be created. But, from the jealousy with which all proceedings within the prisons are watched by the outside population, and the rapidity with which intelligence regarding them is spread, it is evident that extreme care must continue to be observed in the matter. Yet, it is well known that imprisonment, with its forced associations, is always attended with loss of caste, which, however, is readily restored by the performance of slight penances on release.

Among the most interesting of the reports submitted to me was one from the magistrate of Gya, which I reproduce, as it not only contains some curious information, but shows how, by a little

attention and intelligent study of the matter, much light might be thrown upon the subject throughout the country.

Mr. Merrington stated that of the Hindu castes the Dosadhs, the Gwallas, the Domes, the Rujwars and the Bhunyas, were the people from whom the criminal classes in his district were generally recruited. Gya is an important town of Behar, containing several sacred shrines to which pilgrims resort from all parts of India.

“The Domes (basket-makers) are the petty thieves—as a rule, basket weaving and pilfering seeming to require some common quality. The Dome steals a handful of sweetmeats when no one is looking; he robs little girls of their ornaments and toys; he knocks money out of the hands of children, and runs off with it. Sometimes he takes part in burglaries, and such offences where more courage is required, but he is a petty thief by rights.

“The Gwalla (cow-keeper) as a rule, confines himself to stealing cattle. This is a natural consequence of the temptations to which his profession subjects him. His caste is respectable. Cattle thefts are the most common of the offences against property in the district.

“The Dosadh (village watchman) is a thief and a robber essentially. He is a chowkeedar generally. In former ages the Dosadhs were nothing but robbers. The villagers would pay one of their number to protect them against the rest; the custom was handed down, and the village chowkeedar is always a Dosadh in these parts. His position makes him the most mischievous ill-doer in the district. He knows where a rich villager keeps his money, and he gets other chowkeedars or regular thieves to steal it by burglary or dacoity. He knows all the weaknesses of the thana, and enjoys the confidence of his Ilákhadár, for whom he gets up false cases against refractory tenants, and gives false evidence in civil and criminal cases, and aids, with the imperial prestige of his government badge, at the division of crops and lining of boundaries. He abets the Gwallas in stealing cattle, and takes money from the owner to recover them, and gets up nearly all the dacoities that occur. So long as the chowkeedaree law remains in its present anomalous state, where the landholder appoints the chowkeedar, and not the district magistrate, so long will these Dosadh chowkeedars remain what they are—an invaluable means to the Ilákhadár of turning Act X and the Penal Code to his own account, and an unmitigated curse to the villagers of the district. If, as alleged, the gaols about the country are stocked with the wrong men, these Dosadh chowkeedars may be fairly assumed to be the root of the evil.

“The Rujwars (cultivators, formerly hunters), are a jungle people by rights, and belong properly to the territories of certain zemindars whose estates hug the great jungles to the south of the district, or are comprised in them. They work as coolies for the ryots of these estates, and the zemindar assigns them occasionally small patches of jungle land for themselves. They find employment for some months of the year, but during the idle months their necessities drive them into the plains, where they turn robbers, and dacoits, and burglars. There can be little doubt that the zemindar's servants and petty landholders connive at their depredations, while there can be no doubt they are abetted by the chowkeedars. Like the Indians of the prairies, they are a restless people, and their numbers are not on the increase, I believe, as the jungle lands are growing absorbed from year to year.

“The Bhunyas, again, are a jungle race. They have settled down generally as ryot coolies in the plains, accommodating themselves wisely to circumstances, and they flourish at their peaceful occupation. Many of them, however, lurk about the jungles that sheath the Trunk Road, as it were, in its downward course. They join with the Gwallas of those parts, and rob travellers on the different roads. Otherwise the Bhunya is generally a burglar and a thief when the opportunity offers itself, though, unlike the Rujwar, he is not in the habit so much of seeking his opportunities.

“These, then, are the classes of men in the district, whom their want of caste and the extraordinary temptations of their position render peculiarly liable to crime.

“Occasionally the district is visited by professionals from other districts—from Goruckpore—mostly Nuts or gipsies, who are petty thieves, Cheynes or cut-purses—men who carry small knives sharp as razors in their mouths, and frequent the bazaars, where, with wonderful instinct, they feel out the nooks on a ryot’s person, where he has tucked the corner of his *cummerbund* in which his money is tied up, and then with a neatness still more wonderful the Cheyne snicks off the bit of cloth with his knife and disappears with the rupees.

“Then there are the Sindhyas and Burryars, professional burglars, who mine into a *Jenana*, coming up through the floor like a stage ghost, and with less noise. They will file off and open the bangles and nose rings and earrings of the sleeping women without awaking them, and then disappear as they came. These people are only known by common report. Naturally they select the houses of rich people for their operations; and such people would rather die than have a police search in their houses, so that cases of the kind never come to the thana. The ordinary burglar, the Dosadh or Bhunya, posts his confederate sentinels, and then picks a hole in the mud wall of a house with his *sindmurry*. When the hole is sufficiently large to push a boy through, or to get through himself, he carefully inserts a *ghurra* or a stick through the hole. If the *ghurra* is not immediately smashed by a blow from the inside—for it sometimes happens that the inmate is alarmed, and stands on guard near the hole inside with a big stick or a sword waiting for the burglar’s head to appear—he sees that the coast is safe, and proceeds to effect an entrance. But all this is very clumsy compared with the admirable devices of the professional, who has artful machinery to suit all exigencies, and will cut a hole into a tent, and step over the sleeping watch dog without alarming the animal. He carries a sharp knife, works naked, and oils his body, so that he is never taken.

“The other crimes committed in the district are those merely that are incidental to human nature, restrained by caste, in a bucolic and agricultural population. But it is evident that, as caste influence is on the decline, the tendency to crime is on the increase. The deep-sighted wisdom that appealed to a native’s vanity not to commit crime, instead of appealing to his conscience, in a country where the executive must always be comparatively weak, left each caste incapable of committing certain crimes, so that a native’s pride of caste or *izzut* was at stake if he committed them. But all that is changed now; or, being changed, and as the caste of the native is disappearing, he is not being provided the more with a conscience.

“As a result of my two years’ experience in this district, I note very strongly the increasing tendency to *indiscriminate* crime in all classes, so that we may confidently await the time when a reasonably high pitch of civilisation will be reached, and a Rajpoot will have as much right to commit *indiscriminate* crime as any casteless Bhunya or Rujwar, while he will always have an equal inclination, *cæteris paribus*.”

The crime of the country again is a good deal influenced by locality, as cattle stealing in border districts, where the property is easily removed and concealed.

It is instructive to find, on tracing them throughout the country, how the same castes, whatever difference of name they bear, are most prone to the commission of the same classes of crime.

Again, it is strange to discover that belief in witchcraft, and the existence of witch-finders, are a source of crime in the East at the present time.

Among the Coles, an aboriginal race in the south-west of Bengal, each village is supposed to have a tutelar divinity, generally an evil spirit, to whom is assigned all the sickness, epidemics, deaths,

and misfortunes which occur in the village. To this spirit certain lands are assigned, and the produce of those lands is used in propitiatory sacrifices. The existence of this superstition is said to be a frequent cause of murder and extortion, in the following manner. The Coles believe in the powers of divination of “witch-finders,” who are usually consulted when anything untoward occurs in a village. This witch-finder, who often lives at a distance, performs certain absurd ceremonials, and pretends through them to discover who in the village has caused the anger of the tutelar deity. The person denounced is generally called upon to pay handsomely for the evil caused, and usually does so, but if he refuses he is frequently murdered: and whether he pays or not, if the misfortune does not cease, he is driven from the village, if no worse fate overtakes him. All this is done in the most entire faith, faith as absolute as that with which witch-hunting was pursued by the puritans of Scotland and of America. Such a state is difficult to deal with by penal laws, and is only to be eradicated by an advance in civilisation.

If time permitted, I could extract many more points of interest from my returns: sufficient has, however, I think, been said to show how useful such an inquiry is, and how necessary a knowledge of the criminal classes is in India, with a view to the detection, proper punishment, and prevention of crime.

III.—*Prisoners Committed to Gaol from 1865-69, and their Disposal.* *Tables I—III.*

In the years mentioned, 357,000 persons were committed to prison, of whom about 113,000 were sentenced for less than one year, and the others to sentences gradually increasing in duration, culminating in imprisonment for life, to which some 3,000 persons were sentenced, of whom 258 were women. All the sentences here referred to were of rigorous imprisonment, or of imprisonment with hard labour. The whole number thus sentenced was, in round numbers, 151,000, or less than one-half of the persons brought to trial.

Those sentenced to simple imprisonment, or a compulsory state of idleness, amounted to 26,000. I regard this as a very serious matter. The prisons of Lower Bengal are so constructed as to admit of no real or effective classification. Imprisonment without labour implies that the crimes committed are chiefly those which are known to English law as misdemeanours. A very large number are probably first offenders. When locked up at night they must be associated with the hardened and habitual criminals of the country. It is sufficient to state the fact to show how thoroughly vicious and demoralising such a system must be, and how impossible it is

that such prisons should not be, as I firmly believe they are, training schools of vice and crime. These non-labouring prisoners are lodged, fed, clothed, and cared for at the cost of the State, and are a thorough incubus to the prison system of Bengal. To most natives of India from the classes which supply the inmates of gaols, mere locking up in insecure places of confinement, with corrupt guards, plenty of plain wholesome food, protective clothing, and the luxury of idleness, solaced by immoral associations, is no punishment whatever. I myself entertain very little doubt, from revelations made to me by prisoners and by some of the prison officers who paid attention to the subject, that the gaols are really responsible for a large amount of crime, the detection, trial, and punishment of which cost considerably more than would be required to build proper prisons. It is in truth the most questionable of all economies to expend large sums in police and judicial establishments for the detection and trial of offenders, and to fail to provide proper means of punishing them after conviction. It would be better to let all minor offences go unpunished, or to inflict such mild penalties as would not render a resort to the gaol necessary, than to send simple misdemeanants to a school from which it is a moral impossibility that they can emerge uncontaminated.

The case of the men, bad as it is, is not so bad as that of the women, for in the female wards of the prisons there is no separation between the tried and the untried, the innocent and the guilty—the woman who steals a handful of rice, and she who murders her husband. I am glad to see that this state has forcibly attracted the attention of the present Lieutenant-Governor of Bengal, and trust that the remedy, often suggested and urged, heretofore in vain, will at last be supplied. Not that it escaped the notice of his predecessors, as I know—but, the effective control of even the sanctioned expenditure of his own province was not really in the hands of the local chief, from a singularly injudicious and unwise system of centralisation, which has been changed by the present Viceroy of India.

Among the circumstances connected with this topic was a sudden and unexplained rise, in 1869, in the number of non-labouring sentences after the removal of the charge of the gaols from the executive control of the magistracy. From an annual average of 4,700 such sentences, including the exceptional year of the Orissa famine, it rose to 7,405. The matter was first noticed by the Commissioner of Dacca, and was placed on record in my report for 1869.

The Indian penal code unfortunately allows of sentences of simple imprisonment from a few days up to 14 years—an unmixed evil, as I shall show when speaking of prison labour.

Sentences of death in the five years were carried out in 211 instances: of those executed 20 were women.

In 1869 I collected exact information for the first time on this subject, and it exhibits a strange picture of a strange state of society. In that year 50 men and 4 women were hanged, all for murder. Thirty-five of the cases were reported: of these 19 were Hindus, 15 Mahommedans, and 1 a Sonthal. 6 murdered children to steal their ornaments; 4 murdered their wives, one in anger caused by omission in the performance of some domestic duty, and three under suspicion of infidelity; 2 murdered their brothers in fits of jealousy on account of women; 1 poisoned another for no discoverable reason; 1 murdered the supposed paramour of his wife; 1 killed his aunt in a dispute about family property; 1 killed his mother-in-law for interfering with him in an assault on his wife—cause jealousy; 1 murdered his cousin with the intention of possessing his wife; 1 killed another because he prevented his committing a theft. The remainder were not accounted for. It is, I venture to think, a creditable fact that in the large population and among the varied races of the Lower Provinces, some of them veritable savages, the vast majority without education, and great numbers without much regard for human life, there should only be an annual average of 40 persons, or in the proportion of about 1 to each million of population, put to death by the action of the criminal law.

The civil prisoners amounted to about 10,000 in the five years. They were chiefly petty debtors and opium and salt smugglers. The law deals gently with them, they are a source of no trouble to the prison authorities, and they are confined in separate compartments of the prison.

The 24 State prisoners were chiefly Wahabees, a sect of Mahommedan fanatics, of whom so much has been heard lately.

Table No. II shows the releases from all causes except death and escape.

The acquittals after trial by the criminal courts amounted in the five years to 129,000, against nearly 180,000 convictions. This is a very large proportion, but as it is due to judicial causes which are not contained in the gaol records, I am unable to explain it. The chief fact of interest connected with it is the large amount of sickness and mortality among prisoners under trial, of whom in some years more than 60 per 1,000 die. On the matter being made known to the Government, every effort was made to bring them to trial as rapidly as possible, with good effect in diminishing this rate.

The greatest blot in the prison system of Bengal is, however, in the treatment of prisoners under trial. In all civilised countries not under despotic rule, it is admitted that a person suspected of

crime should be regarded as innocent until his guilt is established by trial in a properly constituted court.

His detention in prison should subject him to no further restraint than is absolutely necessary for his safe custody. He should be afforded every facility for conducting his defence, and should be brought into personal contact with nothing that can degrade him.

If this is true of European countries, it applies with increased force to India, where, from influences of caste, the prejudices of centuries, and customs which it is unwise and impolitic to disregard, the imprisonment of an innocent man is attended with an amount of shock to his feelings, which we cannot fully realize, even if we can form any true conception of them. Every man loses caste by the mere fact of imprisonment, but to subject a respectable Hindu, in addition, to forced contact with what is vile and abominable in his estimation, so long as he is untried, is, in my opinion, not to be defended on any ground of policy or reason. It is a mistake to suppose that contact with European civilisation has deadened the feelings of any native of India in matters relating to his personal dignity, or that caste has lost its hold on the great body of the people. The task of governing India is one of no ordinary difficulty, and needs an amount of tact, of knowledge of native customs and feelings, and a study of even native prejudices, such as characterised the servants of the grand old corporation which has passed into history, but which do not seem to be possessed in the same degree by their successors.

We have an able and energetic legislature, but I am one of those who think that we are driving the coach too fast, and putting too much pressure on the safety valve.

The prison house is one of the tender points of English rule, for the outside public sympathise with its inmates in a very unmistakable manner, when any attempt is made to introduce measures that are opposed to native feeling.

When the brass drinking vessels of the Hindus were taken away by my predecessor, the population of a great and important city rose, and would have destroyed the gaol, but for the tact and promptitude of a calm and wise judge, who set aside the order until the Government could be communicated with, and on whose pledged word the people had thorough reliance.

Jeremy Bentham long ago pointed out that the caste of a Hindu should be carefully guarded, at least so long as he was untried, and Lord Macaulay's Committee, to which I made reference in my first paper, took a similar view of the matter, and made specific suggestions as to the means which should be provided by the State, from motives of policy as well as of humanity, to render the

detention of all persons charged with crime as little hurtful as possible.

The matter has slipped out of sight; more than thirty years have elapsed, and nothing has yet been done. A few figures from my records will show how much preventable injury is thus inflicted.

The daily average number of prisoners under trial has ranged from 1,200 to about 2,000. The death-rate among them during the first years of my incumbency averaged 10 per cent., and it subsequently fell to about 60 per 1,000. Now it is somewhat less, but must still be in excess of the death-rate of the population at large; a fact which cannot, however, be exactly determined before a census is taken. There is no doubt, however, of the fact that in the five years to the consideration of which this paper is devoted, 129,000 persons were acquitted of the crimes charged against them, and must, therefore, be regarded as innocent.

The under-trial wards of most of the gaols of Bengal are occasionally liable to dangerous overcrowding. Many of the persons accused and confined are insufficiently clad, and those who are really innocent are invariably in a state of agitation and alarm very injurious to health.

In a country where the judicial bench is, for the most part, occupied by imperfectly trained magistrates and judges; where native testimony is, as a rule, unreliable; and where the law of evidence is imperfectly understood,—the risk of condemnation which an innocent man runs is very great indeed. In the greater number of sentences for short periods there is no appeal to a higher tribunal: hence the matter cannot be too strongly and earnestly urged. I have reason to believe that the chief sickness and mortality is, in these circumstances, among the innocent.

The real remedy is that suggested by Lord Macaulay's Committee; and I am of opinion that the places of detention for prisoners under trial should be separated from the gaols, and be placed in the vicinity of the courts, which in some places are at long distances from the prisons. Much of the marching to and fro and public exposure of the prisoners, would thus be avoided.

If India were properly represented in the Imperial Parliament, and the enlightened public opinion of England could be brought to bear upon this and similar evils, remedies would, I am satisfied, be promptly applied, and grievances be removed which are now unredressed, simply because they cannot find expression.

This is not the place to pursue this matter further, or to show that the Parliament which sits with closed doors in Westminster is fast becoming an anachronism for the control of the Government of a great empire. No one can deprecate more strongly than I do the bringing of India within the influence of party politics in Eng-

land; yet, when a measure of such obvious justice and policy as that which I now advocate can be delayed for forty years, it is evident that some change of procedure is required in dealing with Indian questions.

There is no doubt in my mind that there is, at the present time, a feeling of inquiet and unrest abroad in India that cannot safely be disregarded; and that every measure which would tend to allay this feeling should be adopted from motives of policy, if from no higher motive.

There are other curious and interesting matters contained in my records which I should have liked to have submitted to you, had time permitted. I cannot, however, refrain from mentioning one of them. In 1869 the returns submitted to me, and which I had every reason to believe were correct, showed that the imprisonment of 45,319 males, and 2,777 females—in all 48,096 persons—deprived 74,590 children of their personal care and protection; that 58,896 wives were left without the protection of their husbands; and that 2,489 wives parted with their husbands for life.

Let those who think that tortures of body and mind should be added to imprisonment, in the vain hope of making prisons a terror to evil-doers, reflect upon the enormous amount of human misery which these few figures represent, and ask themselves if any mere infliction of physical pain can possibly add to the deterrent influence of such a disruption of social ties. What becomes of this great body of women and children, I know not; but it is to the eternal credit of the people of Bengal that they are not allowed to starve, and that few, if any, of the children are driven to the commission of crime from the loss of their natural protectors, for the whole number of children admitted during the year referred to was 43. Can we say as much of our own country, with all its boasted civilisation and advancement!

Table No. III exhibits the religious sects to which the persons committed to prison belonged. Of these, in whole numbers, 215,000 were Hindus, 128,000 were Mahomedan, nearly 18,000 were aboriginal and border tribes, and between 5,000 and 6,000 were Christians.

There is no room to give you the details of castes, sects, and nationalities represented by these figures; nor is it possible even to speculate upon their proportion to the general population of each of the denominations. Their real value will, however, be seen when a census of the population has been taken, and no pains ought, I think, to be spared to collect all such particulars in as great detail as possible. It is impossible to tell what light they may hereafter throw upon numberless circumstances connected with the state of native society of which at present we know little

or nothing, and in what way they may guide legislation in wise and useful channels.

IV.—*Classification of Prisoners.*

There is but one cellular prison in Lower Bengal, the European penitentiary at Hazareebaugh. This is well built, and leaves nothing to desire in the way of separation. There is no other gaol in the presidency in which classification of prisoners is possible, except to a partial but most beneficial extent in the Calcutta gaol.

In 1856, when I had carefully examined nearly every gaol in my jurisdiction, I reported to the Government that they combined the largest amount of insecurity with the smallest amount of fitness for their special purpose, and that most of them included nearly every defect of construction and arrangement that could be contained within their walls. Indeed, some of them were even without walls, a frail bamboo fence, decayed from age and exposure, being the only barrier between the prisoners and the outer world.

The male and female wards in more than one of those prisons afforded every facility for the enactment of the ancient comedy of *Pyramus and Thisbe*, and doubtless it was enacted.

The majority of those prisons were in the same state when I resigned my office in 1870.

In many of the gaols the wards and yards were separated by inner partition walls, and each enclosure contained its well, cook-room, and work shed. In these enclosures the wells were little better than cesspools; the arrangements for work were so insufficient that the prisoners had to be taken outside; and the whole arrangement interfered so seriously with ventilation that it had to be put an end to on sanitary grounds.

The walls were removed, the wells were filled up, the enclosures were turfed or metalled, and the prisoners were merely separated in large groups by night.

The principle of classification adopted was that of crime, as laid down in the Indian Penal Code. To the outer world, and to those who have not made a special study of this subject, there is a look of symmetry and sense about this arrangement, which at once recommends it to the imagination. This is not, however, the only prison arrangement that is fanciful and speculative. It will not bear close scrutiny.

In addition to the unavoidable and necessary demoralization of association in the hours of ease and idleness—so vividly depicted by Mirabeau from his Bicêtre experience—the congregation of members of the same brotherhood of crime is, in reality, the very worst that could have been devised. It neutralises punishment,

and renders reformation more hopeless than ever. The thieves compare notes and plan new schemes of depredation with increased knowledge. The gang robbers boast of their exploits, and excite their less criminal brethren to similar deeds of daring and plunder. Crime, in fact, is organised with the skill that characterises its adepts. It is also based on a want of knowledge of native manners and customs; for the cattle stealer or lifter loathes the cattle skinner with all the scorn of an Asiatic nature, and will no more fraternise with him in gaol than he would in his village; and so on of many other classes of crime. If they *must* be associated, it would be better to mix them up so as to secure the separation of the same classes of offenders.

Those again who, according to our English notions, are the most serious offenders, viz., those who commit crimes against the person, are in reality the least depraved, and many of their offences are due to the peculiar state of native society, and not to any such moral turpitude as stamp the Tropmans and similar miscreants of Europe.

This is even the case with those who commit murder as a profession and treat it as a fine art—the Thugs.

This is no fanciful picture, but is painted from much personal observation, and from statements made to me by prisoners in different gaols, and in different parts of the country.

That the prisons of Lower Bengal are, therefore, training schools of vice and crime, I entertain no doubt whatever.

About the worst of them all was the female prison at Russa, of which the immorality, as revealed by prisoners to the late superintendent, Dr. Fawcus, was simply revolting.

The only classification that is of real use as a measure of morality or discipline is that of individual separation, which is more necessary in the east than it is in the west, for reasons which you can readily divine. I know that this is doubted by some high authorities in India—so much so that it was at one time contemplated to strike out of the penal code all that related to offences against nature. I could tell you, were it worth while, why it was retained.

I constantly represented and urged this matter. The local government was willing to amend it, but to carry out the changes required an expenditure of funds which the local authorities had no means of obtaining. I should not now have dwelt upon the point had the withholding of funds been based on financial grounds. But the late Government of India, in a dispatch to the Secretary of State in England, and still more emphatically in a note on the gaols of India drawn up in the Home Department, attempted to show that the separate system, as a system, was not suited for India. The grave want of knowledge of the subject exhibited by both the

dispatch and the note, has thrown back the question to the ante-Macaulay period of Indian government. One of the greatest drawbacks to progress and good government in that country is the constant change of men and measures, over whom and which there is no enlightened public opinion to exercise the control, which even the best-intentioned authorities require.

If it be judged by its intentions, I believe that the world has never seen a government more honestly desirous of the welfare of those committed to its care than is the government of India. But the day is, I venture to think, fast passing away for the mild paternal despotism which has heretofore been regarded as the model for British rule in India. We are too apt to forget that the natives of India are, by nature, among the most intelligent of mankind; that the leading men among them are advancing at a somewhat rapid pace in knowledge and acquiring sound views of State policy; that the evils of misdirected legislation are magnified among the superstitious, uninformed, and easily influenced masses of the people, and that a public opinion is in course of formation at the seats of government which it is unwise and impolitic to disregard, and for which it would be prudent and proper to find timely expression in the Councils of the State. India is not yet ripe for representative institutions, but she is quite ready for the admission of her best men to a larger share in the government than they at present possess, and to the exercise of some control over the invariably well-intentioned, but not always wisely-directed despotism by which she is at present managed.

Be that as it may, had there been any public discussion of the question, I doubt much if the erroneous views of the Government of India would have passed unchallenged.

To place the prisons of Bengal on the footing required by our present knowledge of the subject, needs the reconstruction of most of them. All convict prisons or central gaols should be entirely on the separate system, and proper means of separating prisoners should be provided in all district prisons. Adequate establishments to work them efficiently should be given to all.

The central gaols now in course of construction in Bengal fall very far short of these requirements, and I regard them as a waste of public money. In them association is the rule, separation the exception.

The motives which lead men to commit crimes are so various and obscure, and the degree of moral turpitude of those engaged in the same class of offences is so different as to render it impossible to reduce them to a fixed standard, or to gauge them with any approach to accuracy.

Hence, if reformation, with improvement of the individual, is to

be a condition of any system of prison discipline, and the gaol is to be regarded as, in some sense, a hospital for the treatment of moral diseases, individuality is the sole means of treatment that is likely to be attended with cure.

A physician would never think of prescribing the same remedy, in the same doses, for a hundred patients of different sexes, ages, temperaments, idiosyncracies, occupations, and the multitude of collateral conditions that influence individuals, merely because they suffered from a disease bearing the same name. This would rightly be considered and denounced as quackery.

As little should the State physician group his patients in masses, and prescribe their treatment with a uniformity that can never be attended with success in the regulation of human disorders.

Crime is one of the most contagious of those disorders, and to concentrate the poison in the highest degree, is surely not the safest means of diminishing its virulence or checking its spread.

It may seem to you that I am wasting both time and argument in killing dead men, so complete is the conviction of the civilised world regarding the necessity for the separation of prisoners; but it is not so when the contrary doctrine is preached, and the contrary practice is followed by a powerful and despotic Government, exercising and, in this matter, misusing its power in the name of England.

V.—*Labour and Employment of Convicts.*

In the paper published in the twenty-fifth volume of the *Journal* of the Society, I mentioned the principles on which the labour of the convicts of Lower Bengal were regulated, and stated the economical results obtained up to 1859-60. The figures representing the net earnings of the convicts were taken from a Government return not prepared in my office. In Table No. IX, appended to this statement, I have taken the figures from my own reports, as the most correct record, inasmuch as they were obtained from the returns submitted monthly to me, and only accepted after the strictest scrutiny to test their accuracy.

My views on the subject of the economical, disciplinary, and reformatory influence of remunerative, as compared with unremunerative prison labour, have been strengthened by my subsequent experience. They were accepted by the Government of Bengal to the time of my departure from India, and although some objection was taken to them by the Government of India during the viceroyalty of Lord Lawrence, the industrial system continued in full force to the end of 1870, the period at which my responsibility ceased.

The chief ground of opposition to it was, that in my strictly industrial system, punishment was alleged to be sacrificed to profit,

and the judicial object of imprisonment to be lost sight of, viz., to render a prisoner an object of as much pain as could be inflicted without injury to health. It was assumed that labour which did not cause violent physical exertion was not hard labour in the sense required by the criminal law, and that all occupations which interested convicts were out of place in the dreary melancholy gloom that ought alone to characterise a place of punishment. The arguments of Lord Macaulay's Committee were revived, and a return to the plan of tread-wheels, cranks, and similar weary ways of causing physical exhaustion, were recommended.

The fact was ignored that the Government of India, to which the report of that Committee was addressed, did not fully accept its views. The first paragraph of its reply stated that, in the then existing state of information on the subject, "more than a conditional assent cannot be given to the views of the Committee. Every reform of prison discipline is almost of necessity attended at its outset with extraordinary expense. To exchange the common herding of prisoners of all descriptions for careful classification—to substitute a strict and useful industry for idleness, or for a light and ill-directed labour—to provide that the life which is irksome should not also be unhealthy, and that the congregation of the vicious should not be a school of vice, are all objects, for the first approach to which buildings must be erected, machinery formed, and establishments and checks upon establishments contrived, and in the perfect attainment and maintenance of which great disappointment has, after every effort and expense, in many countries ensued. In no country is it likely that greater difficulty will be experienced than in this [India]. In the mere locality of the prison, that which is healthy one season may become a pest-house by a blast of fever or cholera in the next. In its form, the close yard, which is not unwholesome in England, would be a sink of malaria in India. For food, for labour, and for consort, there are habits and an inveteracy of prejudice and of feeling bearing upon health, such as not elsewhere to be encountered; and, superadded to all this, is the absence of fitting instruments for control and management, while it is upon a perfect tact and judgment, and an unwearying zeal, that the success of every scheme of discipline has been found to depend."

The principle of solitary confinement, and of the "wearisome application for at least some certain and considerable portion of the term of each sentence of labour to machinery," were, however, assented to tentatively; and estimates were called for for the erection of "one general penitentiary, with all its suitable appurtenances, and for the improvement of the circle of district gaols connected with this central building."

Ranges of cells were accordingly erected in Calcutta and at Deegah, and a tread-mill and cranks were provided, but the latter were speedily abandoned; and in 1843 a circular order was issued by the Government of Bengal, which was then administered by the Governor-General of India, in which the industrial system was clearly and definitively sanctioned. In this order officers in charge of gaols were directed to bear in mind—1st, that the labour imposed be apportioned in fixed tasks, and be sufficiently severe to keep the prisoners actively employed throughout the day, with necessary intervals for rest and meals; 2nd, that the labour be remunerative—that is, when the labour of each prisoner employed in it gives a profit equal to or greater than the entire cost to the State of such prisoner; and, 3rd, that it should not be repugnant to the castes and religious customs of the prisoners.

In this state I found the question in 1855. The industrial pursuits were conducted on no fixed principles; the exaction of task work was imperfectly attained, if attained at all; the prisoners engaged in manufactures rarely, if ever, repaid the cost of their maintenance; and the whole system demanded reconstruction and arrangement. For the failure, however, the Government was nearly, if not quite, as much to blame as the prison department. Although the pernicious and paralysing doctrine of unmeaning economy was not then insisted upon with the utter disregard of efficiency that characterised it in later years, the means and appliances for the successful establishment of remunerative prison industry were not supplied.

The largest sum realised from the industry of the prisons was 9,516*l.* in 1854-55; but I ascertained that a considerable proportion of even this amount was not really a net profit, from the erroneous system on which the balance sheet was constructed.

I issued stringent orders that all labour should cease which was neither penal nor profitable; but, although my constant attention was directed to the matter, I am free to confess that, in the majority of the prisons of Lower Bengal, but little was really accomplished. I was unwilling to recommend any expenditure that could be avoided for gaols which it was simply impossible to convert into prisons without reconstruction; and I hoped against hope that central or convict prisons would be established in which a thorough and rational system of prison discipline could be enforced, such as I embodied in the Bengal Gaol Code of 1864. These prisons were at last sanctioned, and three of them were in course of construction when I left India, but, as I have stated already, I consider their plan to be extremely defective. Fortunately, the enclosure secured is such as will admit hereafter of their radical defects being remedied when the determination of the true principles of construction of convict

prisons is taken out of the hands of the Public Works Department, and the most false of all systems of economy is abandoned—that which fails to provide suitable buildings and instruments for the proper punishment of crime, and thus renders nugatory the immense sums of money expended in police and judicial establishments for the detection, trial, and sentencing of all classes of offenders.

Bad as were the buildings, and inefficient as was the agency employed in the executive management of the gaols, so long as they were entrusted to an overworked magistracy, of whom few were fit for, and fewer still willing to take any trouble in the performance of an uncongenial duty, some little approach to order was established, and as much success was attained as could reasonably be expected in such unpromising circumstances.

The industrial occupations were varied as much as could be accomplished in the extremely varying local circumstances of the different gaols, and some of the most glaring defects of the previous system of neglect and carelessness were removed.

In one gaol only was the industrial system carried out in its integrity, the great prison of Alipore; but the incurably defective construction of this place of punishment rendered its management a task of extreme difficulty, needing the exercise of the greatest tact and judgment, and of incessant vigilance on the part of the officer to whom its immediate management was entrusted.

The presidency gaol of Calcutta had, in the hands of the sheriff, and under the nominal supervision of the judges, been so entirely mismanaged for many years; and the house of correction adjoining it had been so neglected by the chief magistrates of the city, as to have become a scandal and a reproach when they were placed under my supervision in 1864.

They were entirely remodelled, and, under the able and energetic control of a medical officer, the criminals of the capital of British India were subjected to a more severe and wholesome discipline than had previously been known.

The European penitentiary at Hazareebaugh, in which were confined all Europeans, Americans, Africans, and Eurasians sentenced to penal servitude, was the only prison in the whole of my jurisdiction that was properly constructed. The buildings were, however, not entirely finished when I left India, and the number of prisoners then confined was too small to admit of the introduction of any well-organised system of prison industry.

From this brief review, it will be seen that the industrial system was worked under every disadvantage in Lower Bengal, and yet the economical results were such as to show that with properly constructed gaols, efficient establishments, and sufficient funds to work

them, the prisons of that province could have been rendered entirely self-supporting, without any diminution of such severity of discipline as can properly be resorted to.

The productive industry of the gaols above referred to, netted the following sums:—

	£		£
1856-57	13,165	1864-65	34,175
'57-58	14,967	'65-66	35,217
'58-59	15,140	'66-67*	25,851
'59-60	20,838	'67	44,080
'60-61	38,011	'68	57,320
'61-62	44,719	'69	46,588
'62-63	36,466	'70	45,274
'63-64	45,208		

Thus in the fifteen years of my incumbency a net sum of 513,019*l.* was earned by the proportion of prisoners sentenced to labour who were employed in industrial pursuits.

If the time and space allowed permitted, I could show that in some of the gaols each prisoner engaged in industrial occupations earned more than he cost; that in them the task-work exacted was fully equal to that performed by a free labourer of the same class; that there was no foundation for the surmise that punishment was sacrificed to profit; that the labour performed was really hard labour in the sense intended by the law, inasmuch as at the close of each day's work, it was attended with as much physical exhaustion as was consistent with the maintenance of health; and that so far as it was possible to ascertain its results, many, if not most of the skilled workmen trained in those prisons, obtained employment and were earning an honest livelihood on the completion of their sentences.

It was not my intention to have noticed the economical objections raised in India to the employment of convicts in remunerative industry, for those objections had nearly ceased to be urged, and were never of sufficient cogency to need serious consideration; but the recent action of the National Trades' Congress at Norwich renders it desirable to say a few words on the subject, in its more general application. The opinions of the working classes require and deserve to be treated with respectful consideration when seriously urged, and stated without an appeal to passions and prejudices which render discussion impossible.

I read with regret, but without surprise, the resolution passed at Norwich by the National Trades Congress, because I believe it to

* This was for the eight months from May to December, 1866; after which all calculations were for the calendar year.

be based on an economic fallacy. The resolution was to the following effect :—

“ That this congress views with serious apprehension the unfair
“ competition which the introduction of convict labour has created
“ in the public market, and is of opinion that the disposal of such
“ labour should be confined entirely to the charitable institutions
“ of the country.”

Reference was made to the ruin of the cocoa-nut matting trade, by prison authorities going into the market and underselling the other manufacturers. It was stated that this tended to increase pauperism and even crime. The speaker did not, however, object to the prison authorities supplying charitable institutions, the army and navy, and public bodies generally, at cheaper rates than those of the open market, because it would be better for the tax-payers, for the working men, and for the fair employer in the open market.

Economic science has not yet attained a sufficient degree of exactness for its dicta to be received with unquestioned confidence, particularly by any class whose immediate interests are affected by the operation of an economic law. Until elementary economics are taught in all our schools, and such principles as are already accepted by the masters and exponents of the science are much more widely known than they are at present, it is unreasonable to expect that any other interest than self interest will govern the actions of any class of the community, and particularly of the artisan class, who are quite right to watch with the most jealous care all interference with trade by the State.

I am one of those who think strongly that Governments should interfere as little as possible with private enterprise; that such interference is mischievous, not only in checking the development of the ability employed in, and the increase in the productive resources of a country, but that it generally results in the provision of an inferior article at a higher cost than would be obtained by a fair resort to the open market. If the resolution is aimed merely at the *unfairness* of the prison authorities in *under-selling* the free manufacturers, I cordially concur in it, and, were I possessed of the necessary authority, would at once prohibit its continuance.

I may mention a case in point which occurred in Bengal. During the sepoy revolt and the field operations rendered necessary for its suppression, an urgent call was made for the rapid production of a larger amount of cloth for tents to shelter the European soldiers, than the market could supply. In obedience to this call, I at once suppressed every other manufacture in those gaols in which there were skilled weavers, and soon turned out some thousand yards of the cloth required. It was woven strictly according to the pattern supplied, and the price affixed to it was the

market value of the kind of cloth of similar quality. It was rejected by a Government committee as not up to standard, and I was then asked to sell it at a rate below the cost of production, on patriotic grounds, when other arguments failed to convince me of the correctness of such a proceeding. I declined to do so, and sold it in the open market at a higher price than that at which it had been tendered to the Government. I was afterwards informed that this same cloth was purchased in the market, and passed by the committee which had previously rejected it; and that it cost the State much more than it would have done had it been at once taken, as it ought to have been, when tendered.

In a similar manner, and with a like want of sense, constant efforts are made by the Public Works Department in India to undervalue convict labour, in order to show a better balance sheet of work executed. I was unable to resist this measure, and it has certainly not tended to increase my respect for State interference in economic questions.

If the Norwich resolution, however, is directed against the employment of convicts in productive works generally, on the ground of their interference with trade, I am sorry to be unable to agree with it. The State is not a free agent in the matter. A large body of men and women are forced upon it whom it *must* maintain at the expense of the tax-payers. If in idleness or in unremunerative occupations, it is at the cost of the whole community, with the additional disadvantage of letting loose the criminals to prey upon that community, certainly no better, possibly much worse, than they were when first convicted; for prison associations could not, in such circumstances, be charged with mending either the morals or the manners of the black sheep of society.

I am quite willing, however, to accept the Norwich resolution as it stands, for if the training of convicts in the arts and handicrafts needed for the service of the State be restricted to the supply of the wants of the army and navy alone, it would occupy far more men and women than the prisons contain; and would teach all of them the means of acquiring an honest livelihood on release.

But, would it not raise up a host of objectors of another class, the contractors of supplies of all kinds, boots, shoes, clothing, and the thousand other necessities of the soldier and the sailor? and, indeed, in its ultimate results it would, although by a more indirect process, affect the labour market quite as much as the direct proceeding objected to at Norwich.

I myself, as a prison officer of some experience, have no great affection for mat-making as a branch of prison industry that is likely to be productive of much good in the way of reformation. Its only advantage is that it is quickly and easily learnt, and is,

therefore, suited for the employment of short term convicts, and of those not possessed of sufficient intelligence to acquire a knowledge of a handicraft needing greater skill, industry, and perseverance. It would surely not be difficult in the prisons of the United Kingdom to find less objectionable and equally remunerative means of occupying the time of the class referred to, for it is more than doubtful if a knowledge of mat-making can be turned to any useful end by the majority of released convicts. Moreover, it is just one of those occupations in which the blind can acquire considerable skill, and they are about the only class in whose favour I should feel disposed to set aside even free trade itself, for surely there are none more requiring and deserving of the sympathy and protection of society than those deprived of the light of heaven.

In any case, there should be no under-selling or unfairness of any kind in dealing with prison products, for this is a violation of an economic law of as much importance as that which should regulate prison labour itself.

I am quite certain that the artisans of England, from whose ranks have sprung some of the greatest benefactors of mankind—men who have assisted as much as even her statesmen, her soldiers, and her sailors, in raising her to her present position among nations—are far too generous in their instincts, from any mere motive of self-interest, to deny to any body of their fellow citizens the means of emancipating themselves from the soul and body destroying influence of crime, and its attendant misery and degradation. If it can be shown, and I think it *can* be shown, that the best means of reclaiming criminals is to inculcate in them habits of order, and to teach them a knowledge of such arts as will enable them to enlist under the banner of industry, and to fight the good fight of honest labour, instead of becoming freebooters under the black banner of crime or the red rag of Communism, who can doubt that the great hearts of the industrial classes will ultimately welcome their return to their ranks, with the feeling that greeted the reception of the Prodigal Son in one of the most beautiful parables of our Christian Faith.

To the progress of that public opinion which is slow and unperceived in its immediate march, but which is invariably so true and just in its final action, may safely be left the decision of this great question. It is neither prudent nor politic among a free people, to be too far in advance of public opinion, or to force measures upon the acceptance of the nation until they are prepared to receive them. The more closely, calmly, and widely this question is discussed and considered, the more certain I am of its speedy and correct solution.

It is, I think, much to be regretted that the present unsatisfac-

tory state of the convict-labour question is due, in some measure, to the unwise action of the criminal law in England as well as in India.

The Indian penal code is said, by eminent jurists to be in advance of the statutes relating to crime at home, but, in this particular, it is certainly quite as defective.

The obvious intention of the legislature in adding labour to criminal sentences is not only to increase the severity of those sentences, but to mark its sense of the greater moral turpitude of the crime.

A simple misdemeanour, or an offence of any kind that is supposed to inflict a slight injury on society, is visited with a short term of simple imprisonment, or imprisonment without labour.

To all offences supposed to be attended with greater injury to society, and which are associated with a lower moral standard, is added a provision of labour. Thus, prison labour is at once associated in the public mind with an element of degradation, which is not only injurious, but founded on false principles.

If the motives which impel men to the commission of crimes could be gauged with precision, and the infinite and obscure combinations of human actions that inflict injury on society could be calculated with any approach to mathematical accuracy, a scale of punishment might possibly be framed that would fit closely each criminal act.

But, as such precision in legislation is impracticable, and, if practicable, would be of doubtful efficacy, it is a matter of concern to all interested in gaol reform to see that the law itself does not oppose any obstacles to the prevention of crime, in its manner of dealing with it in judicial sentences.

I am certain, therefore, that all who have been closely engaged in the management of criminals will concur with me in considering that every provision of the law which tends to degrade labour, and to add to the severity of punishment by aimless tasks, and the mere exercise of unreasoning muscular power, is an unmixed evil.

It is needless for me, in the capital of the most industrious nation of modern times, and in a Society which is devoted to the discussion of questions of which the basis is, for the most part, human industry in one or other of its infinite forms, to enlarge upon the dignity of labour. It is one of the purest blessings conferred upon man by the Creator, and the one which, in its rational exercise, lifts him high up above all other created beings—on a level, in fact, to which no Darwinian principle of “natural selection” can ever raise them. To attach a sense of degradation to it, in our penal system, seems to me, therefore, to be an error of principle. It is peculiarly so in relation to the criminal classes, because by far the greater

number of crimes against property, and no mean proportion of crimes against the person, originate in the idleness which is the fruitful parent of both vice and crime.

The natural corrective of this idleness is industry. By the inculcation of habits of honest industry, is the thief who will not work, or the man who wishes to grow rich at the expense of others without any sustained exertion of his own, most likely to be reclaimed. Once he realises the true dignity of labour, and that as a mere matter of economy it pays better to earn his bread honestly than to pick pockets, or to break into houses, the less likely he will be to relapse into crime.

It is likewise an error of practice as applied to imprisonment, of which, as wisely remarked by Mr. Ayrton a few months since in the Society of Arts, it should be an alleviation or mitigation, and not an aggravation. But, so long as the error is committed by the law, it is scarcely possible for those charged with the administration of prisons to remove its evil influences.

They cannot set aside the intention of the law, nor is it desirable that they should be armed with any such authority. The less, in fact, officers in charge of prisons are allowed to tamper with judicial sentences, and the more strictly they carry out those sentences, the better.

The imposition, then, of labour as part of a judicial sentence, intended distinctly as a punishment, and as an aggravation of the severity of imprisonment, should be removed from the criminal statutes; and all sentences of imprisonment for criminal offences should of necessity carry with them the condition of labour.

This labour should not be a senseless picking of oakum, or turning the handle of a crank, but be some form of industry suited to the age, sex, state of health, and other conditions of the sentenced offender. It should in all cases and in all circumstances, be so carried out as to tend to the moral and material amendment of the criminal, and not to torment or torture him either in mind or in body. Much, if not all of the ill success of mere measures of severity and repression is that they contain no element of an elevating character. They act only on the lower and baser instincts of our animal nature, and do not touch the higher chords from the vibration of which alone the harmony of virtue and goodness results.

All laws which contradict the feelings of mankind have been declared by one of the earliest and most enlightened writers on the subject of crime, to be useless, and in consequence destructive.

The infliction of pain cannot undo a criminal act, or diminish the amount of injury caused by it; but all measures which tend to prevent its repetition are a direct gain both to society and to the

criminal who has broken the laws and forfeited his liberty in consequence. Hence the importance which the question of prison industry acquires in connection with the administration of the criminal law.

I do not intend to argue that, for infractions of prison rules and breaches of gaol discipline, there should not be found what I may call corrective labour. This may properly consist of tasks that are in their nature wearying and disagreeable. But even these tasks should be in a useful direction, and contain no element of degradation. The employment of the tread-wheel in raising water for the use of the prison, or of grinding corn for the same purpose, is an example of such corrective labour, and there are other forms known to experienced prison officers which are equally efficacious.

VI.—*Education.*

Of the 365,000 persons committed to prison from 1865 to 1869 inclusive, about 5 in every 1,000 were well educated for their position in life; 75 per 1,000 could read and write; and the remainder, about 920 in every 1,000, were entirely ignorant. The true significance of these figures will only be determined when a general census of the population has been taken.

The record of the state of instruction of prisoners committed for trial was commenced in October, 1858, and to the end of 1869 the state of education of 673,566 persons had been ascertained. Of this large number the proportion of ignorant was as nearly as possible 920 per 1,000; and of those who could read and write, 76 per 1,000; the small balance remaining representing those reported to be well educated for their position in life. This education, however, in the majority of instances was of the most elementary character.

The above figures are chiefly interesting as containing the only accurate record in existence of the state of instruction of any portion of the general population of Lower Bengal. How far it represents the general state of education in the province it is difficult even to surmise; but, so far as concerns the classes who furnish the criminal population, it is evident that no progress has been made in their instruction in the last twelve years. This, I venture to think, is deserving of the serious attention of Indian statesmen. The University of Calcutta is manufacturing bachelors and masters of arts at a rate which so far exceeds the demand for educated agency of so high an order, and the place which can be found for them in society, as to render it evident either that the standard of acquirement is too low, or that the examinations are conducted on a faulty principle. On the other hand, the public instruction of the presidency leaves uninstructed the whole of the dangerous classes, for whom some provision should surely be made in such elementary

instruction as will raise them from the state of absolute ignorance in which they are at present. It is generally acknowledged that a community is virtuous and contented in proportion to the instruction of its members; and, although the connection between ignorance and crime has not yet been very clearly or closely established, the fact that ninety-two out of every hundred persons committed to the gaols of Lower Bengal have never received instruction in any form, seems at least to point to education as a probable means of diminishing some of the evil-doing now existent.

Since I last addressed the Statistical Society on this subject, no progress has been made in Lower Bengal in the instruction of prisoners convicted of crime, and no progress is possible until the Government of India rises to a knowledge of the fact that economy is not the end and object of imprisonment. At present no establishment or agency of any kind is allowed, and the little that is accomplished is due to the zeal and energy of the few prison officers who take an interest in the matter.

The only exception to this statement has been the instruction of female prisoners in the Russa gaol, to fit them for working the presses introduced in that prison. In rapidity of acquisition and readiness in the application of the necessary knowledge, those unhappy women, most of them convicted of very serious crimes, have exhibited remarkable and unexpected aptitude. The prison itself is, however, deficient in every requisite of a place of imprisonment, as I have shown and pointed out to the Government.

The only religious instruction attempted in the gaols of Lower Bengal was in the presidency gaol of Calcutta, and in the European penitentiary at Hazareebaugh, where Christians and Europeans are confined.

To each of these prisons a Protestant and a Roman Catholic chaplain is attached. They work together in peace and harmony, each with his own flock, and are earnest and zealous in their endeavours to reclaim and reform the erring and the fallen.

I am obliged, however, to confess, as the result of much observation of this class, both in and out of gaol, my entire concurrence with the Rev. Dr. Guthrie, that "of all religions that which prisons foster is the worst."

VII.—*Sickness and Mortality* (Tables V—VIII).

As mentioned in my former papers, sickness and mortality of necessity occupy a far larger share of attention, and play a more important part in the administration and in the internal economy of the prisons of Lower Bengal than they do in those of other countries, and than they would in Bengal itself if properly constructed gaols were found by the State. So long as not a single

prison in the province is properly drained, as few of them are susceptible of free ventilation, and as none of them provide for the separation of the prisoners—which is the only real and efficient solution of the difficulty, moral as well as physical,—they must continue to enjoy this bad pre-eminence. I was long of opinion that a death-rate of 50 per 1,000 was not an undue or abnormal loss of life, considering the dissipated lives of the criminal classes, and the diseased state in which a considerable portion of them were when imprisoned; but long-extended observation and a careful study those prisons in which both sickness and mortality have gradually, steadily, and sensibly decreased, have led me to the conclusion that a death-rate of 30 per 1,000 would more correctly represent the amount of risk to life which a prisoner ought fairly to encounter.

Before the gaols were placed under my charge the average annual death-rate was 83 per 1,000, of whom about 17 per 1,000 died from cholera.

In the ten years from 1849 to 1858 the rate was again 83 per 1,000, of which 16 per 1,000 were from cholera. In the quarter of a century from 1843 to 1867, including the year of the Orissa famine, 1866, the death-rate was 81 per 1,000, of whom 16 per 1,000 died from cholera. All these calculations are upon the average daily number in custody.

In the five last years of my administration the rates were as follows, viz.:—

Years.	Average Daily Number of Prisoners in Custody.	Death-Rate from Cholera per 1,000.	From all other Diseases and Causes.
1866.....	22,151	31 ·	74
'67.....	20,183	8 ·	49
'68.....	19,413	6 ·	44
'69.....	19,985	10 ·	41
'70.....	19,853	8 ·	34

Omitting fractions the death-rates from all causes were, in the years mentioned—

1866	105 per 1,000	1869	51 per 1,000
'67	58 „	'70	43 „
'68	50 „		

In 1866 a great part of the distressing mortality was caused by the famine, and the whole rate was exceptional.

Thus, with extremely defective prisons, by great care and attention, and by the necessary sacrifice of some portion of the

strictness of discipline—if anything deserving of the name is practicable in most of the gaols of Lower Bengal—an annual saving of between 600 and 700 lives, calculated on the mean death-rate of a quarter of a century, has been effected.

Had I been instrumental in an equal amount of destruction of human life in a military capacity, I might probably have been deemed deserving of some special mark of distinction from the Crown! The saving of life does not yet, however, possess the same value in the honour market as its sacrifice.

It is impossible, in the limits to which I am of necessity restricted, to give even an outline of the questions considered and of the results obtained in the prisons lately under my charge. Moreover, purely professional and technical details would be out of place in the Statistical Society. I shall, therefore, content myself with a brief exposition of the chief points of interest illustrated by my reports, and of the practical inferences fairly deducible from them.

I must premise that, in 1867, I introduced the uniform method of determining the mortality-rates of prisoners in gaols, suggested by our president, Dr. Farr, and the facts collected were grouped and analysed in exact conformity with those instructions.

The only difficulty experienced in this, as in the collection of all other gaol statistics, was the want of subordinate agency. To such an extent was this carried from economical considerations, that a great part of the time of gaolers and their deputies was occupied in keeping records, when it should have been devoted to their more immediate duties. Still more objectionable was the peremptory order of the higher authorities, that an educated prisoner, whatever his crime or antecedents, was to be employed in the record department of the prison. So stringent was this order that every establishment bill was accompanied by a certificate to the effect that no educated convict agency was available, before the salary of even a single underpaid clerk was sanctioned. I protested in vain, as usual, against the false economy of insufficient establishments. I could do no more.

Table No. VII shows that the aggregate of the mean number of prisoners in custody from 1844-68 was above a half-a-million, that among these, 21,276 cases of cholera occurred, and 729,450 admissions to hospital from all other causes.

The deaths amounted to 40,233, of which 8,326 were from cholera, and 31,907 from all other diseases and causes. This gives a sickness-rate of 41 per 1,000 from cholera, and 1,428 per 1,000 from all other causes. The deaths to strength from cholera were 16 per 1,000, and to treated were 391 per 1,000, or 1.63 and 39.13 per cent. The uniformity of these rates for so lengthened a period

seems to show that the disease has neither increased nor diminished in intensity, or amenability to treatment, and certainly demonstrates that cholera does not play so important a part as is usually supposed in what has been termed its home.

In the presidency gaol of Calcutta, among an aggregate of 1,617 European prisoners, 57 were attacked by cholera, of whom 21 died in the years 1855-68. This, in whole numbers, gives a ratio of 12 per 1,000 of cases to mean population, and 368 per 1,000 of deaths to treated. These rates contrast favourably with those of European troops in Fort William in the same time.

From all other diseases, there were 5,366 cases, with 26 deaths among the Europeans, or in the ratio of 16 per 1,000 of population, and 48 per 1,000 of deaths to treated.

It is generally supposed that the risk of life to Europeans imprisoned in India is very great. This record, and that of the Hazareebaugh penitentiary, in which from 1865 to 1868 there was but a single death among 118 prisoners, prove that this is not the case. It is full of instruction in another direction, and shows that much of the sickness and mortality among European soldiers in Bengal, which has been attributed to climate, defective construction and crowding of barracks, and similar causes, is probably due to totally different circumstances. The European prisoners are always a dissipated lot, and many of them are sickly when imprisoned. In gaol they are entirely cut off from drink and vice, are not over fed, and are usually tolerably hard worked, as in stone breaking, which in Calcutta used to be their chief employment. As a rule they gain weight in prison, and so satisfactory was their sanitary condition shown to be, that shortly before I left India, a scale of punishment diet was introduced for refractory prisoners, who resisted all other means of enforcing obedience. I cannot say that, personally, I am much enamoured of either system, but as a choice of evils, I prefer pinching the belly of an obstinate, unreasonable, recalcitrant convict, to scoring his back. The former, where it can be practised with safety, carries with it no moral degradation; but both are extremely liable to abuse in careless, unscrupulous, or incompetent hands, and I should regard any properly constituted prison in which either was frequently resorted to as, *ipso facto*, a proof of bad and inefficient management.

It would be difficult to convey to you any idea of the extent to which both were abused when the charge of the prisons in Bengal was first made over to me in 1855. No record of punishment was kept. In one gaol alone, containing an average of more than 500 prisoners, and a mean death-rate of 110 per 1,000 in ten years, I found that, by the use of fraudulent scales, the gaoler had for years cheated the prisoners of four ounces of their scanty allowance of

food daily, and by these means had realised a fortune for himself. The prisoners complained bitterly to me of the treatment to which they were subjected, and, so lax had been the previous supervision, that the gaoler had the audacity to use the fraudulent weights and scales in my presence, in the belief that I should not take the trouble necessary to detect the fraud. In many prisons I had to bring this matter to the notice of the officers in charge, and to report it to the Government, for no complaint was more frequent and well-founded on the part of the prisoners, than that of the insufficiency of their food—not from a defective diet scale, but from direct fraud. So long as the prisons were in the executive charge of an over-tasked magistracy, it was almost impossible to prevent it. I believe that there is in no country in the world a more high-minded, honourable, and conscientious body of English gentlemen than I found in the civil service of Bengal in charge of its prisons, when I was placed at their head. They simply could not be in two places at once, and were unable to devote the personal care and attention necessary to prevent this and many similar abuses. For these reasons the punishment of prisoners by withholding any portion of their food was prohibited; and the 335th Rule of the 14th Section of the Bengal Gaol Code of 1864 enacted, that, “in no case, and on “no pretence, shall diet be made an instrument of punishment.”

To return from this digression, the heavy sickness rate of the quarter of a century was chiefly due to fever, dysentery, and diarrhoea—all zymotic diseases, and susceptible of diminution by removal of their causes. Although the fever cases were very numerous, and some of them were severe from local complications, they were all periodic in type, and for the most part amenable to treatment: the death-rate was little if at all in excess of 5 per 1,000 of mean population. These fevers never assumed a contagious character, and true typhoid fevers were unknown, as there were no underground sewers to generate the poison to which that form of fever is generally believed to be due.

A very destructive form of fever has, however, ravaged Lower Bengal for some years past, and is still in active operation in some districts. Upon the subject of this fever I was at issue with the Sanitary Commission, who considered it probable that it had its origin in a specific poison propagated from man to man; that it was not due to any sanitary conditions, however unfavourable; and that it was probably of the same type as the contagious fevers of the North-West Provinces and of the Punjab. Persons labouring under it were frequently imprisoned in Bengal, but in no single instance did it spread in any gaol to which it found admission. It was always amenable to the action of quinine when properly administered, and some hundreds of cases which I saw outside the

prisons presented all the characters of a genuine malarious fever. I believe it to be caused by the great geological change now in progress in the Delta of the Ganges, which has temporarily intercepted the natural drainage of large tracts of country, and that it will continue until the great rivers and their chief effluents have found new channels to the sea, and the drainage is restored to its normal state. Two former capitals of Bengal were depopulated and abandoned from devastating outbreaks of a similar fever, when the rivers on which they were built abandoned their channels.

The real gaol scourge in Lower Bengal is, however, dysentery, which from 1861 to 1865 caused 27 per 1,000 of the casualty-rate of that period. In the five subsequent years it maintained its place at the head of the list, but in a gradually descending scale, proportioned to the general decrease in the mortality of those years. In 1869 the death-rate to sickness from dysentery amounted to 6·43 per cent. of the attacked, against 10·77 per cent. of the previous years, excluding that of the famine, 1866. This showed a diminution of mortality from this cause of no less than 434 per 1,000 of cases. The most singular and encouraging fact connected with gaol dysentery among European prisoners in Lower Bengal in 1869 was that of 62 cases in Calcutta and 21 cases at Hazareebaugh there was not a single casualty. This again contrasts favourably with the results of the same disease among European troops in the Madras and Bombay commands, and probably in those of Bengal also for the same year, but they are not given in the very valuable report of the Army Medical Department. The place assigned to dysentery in the nomenclature of the College of Physicians, I believe to be incorrect as regards the form of the disease seen in the prisons of Lower Bengal. It is neither a local disease, nor one of the digestive system, but depends on blood-poisoning, and is essentially zymotic in character.

Diarhœa is the next affection in the mortality scale, and it has still less business to appear in the place assigned to it by the College of Physicians than dysentery. The death-rate from this cause did not, however, exceed 10 per 1,000, and this disease likewise exhibited some remarkable features. In 199 cases among European prisoners in Calcutta there was not a single death, and the same result was seen in 161 cases among natives, and yet in former years the greatest number of casualties in the Calcutta prison were from this disease.

In the five years from 1861-65 zymotic diseases destroyed nearly two-thirds of the prisoners who died, and in the last five years considerably more than one-half. For example, in 1869, the last year for which the details are in my possession, of 1,029 deaths 674 were from that class.

If space permitted I could trace every disease through each gaol in detail; I will merely refer briefly to some, not exactly as typical examples, but as showing strikingly the progress of amendment.

In the presidency gaol of Calcutta, the mean mortality of fourteen years, from 1855 to 1868, among the native prisoners, averaging annually 574 in number, was 51 per 1,000. In 1867 it was 31; in 1868, 27; in 1869, again 27; and in 1870, 10 per 1,000 of mean population.

In the Bhaugulpore gaol the mean mortality for a quarter of a century, from 1844 to 1868, was 161 per 1,000. In 1865 it was 35; in 1866, during the famine, which was somewhat severe in that district, 84; in 1867, 45; in 1868, 19; in 1869, 71; and, in 1870, 19 per 1,000. In 1866 and in 1869 there were severe outbreaks of cholera in the gaol.

In the cells of the presidency gaol, which contain but 480 cubic feet of air and are ventilated artificially, there has not been for some years a single death from disease due to or originating in the prison: a stronger reason for the construction of cellular prisons could scarcely be produced.

In reviewing this question, the Viceroy of India, in 1867, was pleased to state that if it could be conclusively shown that the outlay for cellular prisons was imperatively required on grounds of humanity, or for any other reason sufficiently valid, the Governor-General of India in Council would have no option but to sanction it as soon as it could legitimately be provided for.

I extract the following remarks from my official report for 1867 on the subject:—

“ I venture, with all deference, to state my belief that humanity demands and pleads trumpet-tongued for it.”

“ The demoralisation of the male prisoners in my gaols is nearly universal—it is impossible to exaggerate or to lay too great stress upon it. This demoralisation is not confined to the men. It extends to the women likewise.”

“ The separation by night, which is the *sole* means of putting a stop to this immorality, would at once double the deterring effect of every sentence.”

“ It is difficult to enlarge upon this subject, and to show why it should be so, without shocking the public feeling which restricts the discussion of matters which are loathsome and repulsive to scientific works. Natives of India are an eminently sociable people, and anything which interrupts their association, whether for good or for evil, is regarded with dislike by them.”

“ A large proportion of the mortality of the Bengal prisons is due to, and inseparable from, the collective system of imprisonment.”

“ Taking the average of the mortality of the last twenty-five years, to give to each prisoner a separate sleeping cell would probably save from 700 to 800 lives annually in Lower Bengal.”

“ It is not probable that the general mortality of the outside population in Bengal exceeds 30 per 1,000 in Bengal. That of the gaols of Bengal for the last quarter of a century has averaged 80 per 1,000.”

“ Does not humanity require that this fearful destruction of life should be diminished, whatever the cost ?”

“ Are not the punishments inflicted in my prisons for breaches of discipline in many cases inhuman, and opposed alike to law and to justice ?”

“ Can any system of discipline deserving of the name be carried out in prisons which do not admit of individualisation at any stage of imprisonment ?”

“ I have already shown that no classification of criminals when sentenced is possible in any of the gaols of the Lower Provinces, except in a minor degree in the presidency gaol of Calcutta, and completely in the European penitentiary at Hazareebaugh.”

“ In several of the prisons there is no separation, even between tried and untried prisoners, during the day. The classification of prisoners in the Bengal gaol code is not, and cannot, be carried out. It is useless to attempt to disguise the fact.”

I then proceeded to show how the prisons might gradually be reconstructed by the appropriation of the Convict Labour Fund, without any additional cost to the State.

Nothing was done, and nothing will be done until public opinion in England is brought to bear upon Indian questions, and that country has a hearing in the Imperial Parliament, which can scarcely be said to be the case at present.

Table No. V exhibits the mortality-rates among males and females in prison: the men die in greater numbers in the proportion of about 6 to 5. In the previous five years the rate was as 7 to 4. This is strictly consistent with the different habits of the two sexes, women leading a more secluded and sedentary life than men when at large.

Table No. VI shows the rates of deaths according to age. I am afraid that no great reliance can be placed upon these numbers, as few natives of India know their exact ages, and there was a great want of care in the preparation of the judicial statements from which the ages were taken.

The most remarkable and striking fact is the large number of old people in prison, for although the statement of ages above 60 is somewhat apocryphal, the people themselves bear all the marks of old age and decrepitude.

The mortality in the prime of life was very great, and is that which is most susceptible of reduction by hygienic measures.

Table No. VIII shows the deaths according to religion. The Christians, who were nearly all Europeans, suffered least, but their numbers were too small for any real comparison. The proportions differed little from those of the preceding five years, in which the proportionate mortality of the Hindus was greatest, that of the Mahomedans next, and that of all other denominations third. The differences were, however, somewhat less than in the previous period.

I had prepared tables to show the ratios of deaths according to periods of confinement, to labour, to occupation prior and subsequent to imprisonment, to diet scales and to seasons, as well as the constant sickness-rates; but I am compelled to omit all reference to them for want of space.

In 1868, I prepared and the Government printed, a special statistical report of the prisons of Bengal from 1861 to 1865 inclusive, containing the above, and all other facts susceptible of illustration by figures relating to these prisons, separated from the mere administrative details of each year. My reason for the adoption of this proceeding was, that statistical inquiries from their nature are liable to inexactness and erroneous deductions from the data accumulated from year to year, in proportion to the limited field of observation and inquiry embraced in each annual return.

When extended over a series of years, as the facts are multiplied and the figures are more numerous, the deductions from them acquire a greater consistence, minor errors are eliminated, local, temporary, and varying conditions are harmonised, and knowledge acquires an exactness and a precision proportionate to the more extended area and time of observation.

Since that volume was prepared, another lustrum quinquennium has elapsed, and the materials have accumulated for a second statement of the same nature. In this the facts and figures for the ten years might be condensed into a comparatively small compass; but as my connection with the Government and the department have ceased, I am myself unable to take any action in the matter.

Before quitting the topic of sickness and mortality, I may mention that the greatest care and attention are still needed to secure the ground already gained, and to reduce the loss of life in those gaols which are still unhealthy. In 1870, fourteen prisons had still high death-rates, varying from 60 to 140 per 1,000 of mean population. So long as this state continues, it is, I submit, premature to consider that sanitary considerations have been too exclusively considered. Human life is, after all, of greater import-

ance than prison discipline, and to convert a sentence of imprisonment into one of death, when this can be avoided, as it assuredly can by a proper construction of prisons, I hold to be altogether unjustifiable.

With these remarks I must end what I have to say regarding the gaols, omitting all detailed mention of the cost of the prisons (Table No. IX), the subject of the recommitment of prisoners, the punishment of prisoners for breaches of gaol discipline, and similar matters of detail. The cost had increased somewhat from the great rise in the prices of all articles of consumption; the recommitment returns were imperfect, and in consequence afforded no exact information regarding relapses into crime; the punishments were far more numerous and severe than would be necessary with properly constructed prisons; escapes were frequent from insecurity of prisons and negligence of guards, and through the agency of the latter there was little doubt that forbidden indulgences of all sorts found their way into the prisons.

The statistical returns of the prisons were collected with the greatest difficulty, from the unnecessary complication of the forms and the want of clerks in the prisons. I am not aware that the history of the forms of return in each has ever been placed on record.

In 1864, the Indian Gaol Committee prepared a series of returns which were complete and perfect, but so voluminous as to render their introduction impracticable. I accordingly prepared a set, reduced to about one-fourth of the number: I was told that mine were not sufficiently numerous. I then prepared an intermediate series, which was adopted. My own opinion was that the whole the information required could be submitted in three or four detailed returns, and that the entire work of compilation and digest should fall on my office. The establishment allowed was, however, quite insufficient for the purpose, and so the chief part of the work was thrown upon the prisons, which were still worse off in the way of ministerial agency. In this unsatisfactory state I left the question, and I have no knowledge of what has since been done to remedy it.

VIII.—*Concluding Remarks.*

There are other points of great interest to which I could have referred had I not already transgressed the limits allowed. I refer chiefly, first, to the employment of well-conducted prisoners in the internal duties of the gaols, both as a reward for good conduct and as inculcating those habits of self-respect and self-control which are the most efficient aids against a recurrence to criminal courses; secondly, to intermediate imprisonment, as practised in a modified

form in Bengal; and, thirdly, to the graduated system of labour enjoined by the Bengal Gaol Code.

To work this system effectively needs properly constructed prisons, and trustworthy subordinate agency in sufficient amount. Bengal possessed neither, and the system could only be very imperfectly carried out in consequence. So hopeless did I, after careful consideration and a thorough knowledge of every prison in the province, consider it to attempt anything like a rigid adherence to the rules, that I avowedly worked them with a wide margin, adapted to the special circumstances of each gaol. The imperfections of the instrument ought not to be debited to the system, and it is wise in all circumstances to make the best use you can of the means at your command. This is all I endeavoured or pretended to do.

And now, as to what I believe to be the merits of the Industrial System.

My theory of imprisonment is, that having good and secure gaols, the real punishment of an offender lies in his entire seclusion from evil associations, and his complete withdrawal from all the enjoyments which sweeten liberty, and render existence desirable. Plain, wholesome food, in sufficient quantity to maintain health, and to allow of the wear and tear of the work to which I shall presently refer, without the slightest admixture of what are deemed luxuries even by the poorer members of the free community. A prison dress, which in itself is extremely distasteful, and rightly so, for it is intended to be a badge of disgrace. The most scrupulous exaction of cleanliness, regularity, and order in all matters, than which nothing is more opposed to the normal habits of the criminal classes. Deprivation of all intercourse with friends, relations, and the other inmates of the prison, until a small restitution of these indulgences has been earned by continuous good conduct, cheerful obedience to prison rules, and satisfactory work, both in the school-room and in the work-room. These results not to be determined by any means such as marks, which are more or less dependent on the integrity and care of subordinates, but in the absolute absence of the name of the offender from the bad conduct and punishment registers, and in the balance-sheet of the value of the work performed by him.

Rigid seclusion, and blotting out for the time of the outer world is the basis of this system; but no solitude, darkness, or other devices, which, veil them as you will, are torture in disguise, and not warranted either by the Christianity we profess, or the civilisation to which we lay claim.

The punishments which should be awarded for breaches of gaol discipline should be humane, and proportioned as exactly to the offences as can be accomplished; for in gaol we have not the latitude

of motive and action which render it impossible to graduate sentences to crime with any approach to rigorous exactness outside. These punishments should not err in the direction of severity, or be calculated to excite those feelings of anger and resentment, which harden the heart, and destroy the humanising influences from which alone there can be any hope of reclaiming a criminal.

All this, if faithfully, honestly, and humanely exacted, is a terrible penalty to pay, and surely should need no addition to render a prison a terror to evil doers.

And now, having caged our criminal and deprived him of liberty—reduced him, in fact, to temporary bondage, in the most exacting sense of that word—what are we to do with him?

Are we to keep him in idleness, to employ him in thriftless tasks which weary the body and deaden the mind, or are we to bring to bear upon him those influences, in the humanising and civilising effects of which all manner of men are agreed, however little they may agree as to the exact means by which they are to be accomplished?

These influences are Education and Industrial Training—the former in the widest sense of the word, for mere instruction is not the educating which it signifies; and the latter in such handicrafts as, while they engage his attention for the better part of each day, and allow him no margin of unoccupied time, give him really hard work, and will enable him to earn an honest livelihood on release.

I contend that we are bound, whatever it may cost, to restore him to his place in society, a wiser and a better man, if possible; and if, in accomplishing this, we compel him to repay his cost—the only thing in the shape of retribution that I would exact from him, as rigorously as Shylock would have extorted his bond from Antonio—it appears to me that we should promote the apparently different ends to be effected by imprisonment, viz., the punishment of the offender and the protection of society, better than has been attained by any system which has yet been tried.

It has another advantage of no trifling value, viz., that if, after full and fair trial on a sufficient scale and for a sufficient length of time, it is ultimately found to fail, there will be no difficulty in trying back, as no material loss will have been sustained, and a resort can then be had to such other means as further experience may show to have a better chance of success. So long as human nature is what it is, and civilisation creates artificial wants, and calls new social and moral disorders into existence, so long will there be crimes in the world, and so long must provision be made for their cure.

The real commencement of prison reform is, however, in the education of the people; and in this I believe that more sure

reliance can be placed than in any scheme of dealing with criminals which it is in the power of human ingenuity to devise.

My test of the management of a prison would be *its* balance-sheet—my test of the behaviour of a convict, *his* balance-sheet. In both cases, with ordinary vigilance in supervision, there ought to be little room for error. The prison should be made to pay, and the prisoner be made to work, in a manner that must admit of no shams. He may feign piety and he may be very obedient to prison rules from calculation of their advantages, but he could not feign good work without performing it; and he could not feign the completion of a task when it was unfinished.

The prisons should cease to be a burden to the taxpayers, and all sentences should be fulfilled to their letter. I would have no remissions of sentence for mere good conduct in gaol, and no tickets-of-leave, and consequently no police surveillance out of doors. Once a man had fulfilled his sentence, he should be in the full and free enjoyment of personal liberty, and assisted as much as possible to regain his place in society. He can never have a fair chance so long as he remains a marked man, and cannot regulate his coming and going as other men do.

If he persist in evil courses, and make crime his profession, he should be removed entirely from the scene, and never be permitted to reappear on it. The world is, and will be for ages to come, large enough to furnish proper places for the banishment of habitual criminals without forcing them on unwilling colonies, or tainting civilised communities with their presence.

I cannot take leave of this subject, and thus finally close my connection with the prison administration of India, without bearing hearty and grateful testimony to the several rulers of Bengal, under whom it was my privilege to serve. Their statesmanlike views, their entire devotion to the good government of the vast populations committed to their charge, and their eminent ability in the discharge of varied and responsible duties, were such as to command the affection and respect of all who knew them. It is difficult in this country to realise the overwhelming nature of the responsibilities associated with Indian administration. If the declaration of De Tocqueville be true, that England owes her position in the opinion of the world to the manner in which she has conquered and governed India, to no men in the long roll of Indian worthies is she more indebted for this opinion, than to the first Lieutenant-Governors of Bengal.

I must also pay a public tribute of affection and regard to the people among whom thirty years of the active period of my life were passed. In powers of mind, in intellectual culture, in their domestic relations, and in the possession of those qualities which are the

foundation of true human greatness, they are entitled to a very high place in the scale of nations. As years roll by, and they are gradually fitted for self-government, as they assuredly will be, whatever may be the future destined by Providence for Great Britain herself, there is no event in her long and glorious annals that she will be able to look back to with more pure, unselfish feelings of satisfaction than her efforts to give to the people of Hindustan the liberty and the civilisation which have placed Her in her present proud position.

TABLE I.—*Prisoners Committed to the Gaols of Lower Bengal in the Years mentioned,*

Classes and Sentences of Prisoners.	1865.			1866.		
	Males.	Females.	Total.	Males.	Females.	Total.
CRIMINAL PRISONERS.						
<i>Sentenced to Rigorous Imprisonment—</i>						
For 1 year and under ...	21,381	736	22,117	25,381	1,670	27,051
„ 2 years and above } 1 year.....	2,684	71	2,755	4,469	110	4,579
„ more than 2 years...	3,225	90	3,315	4,657	113	47,711
Until security is fur- nished	135	1	136	94	5	99
For life	519	56	575	474	45	519
Total	27,944	954	28,898	35,075	1,943	37,018
<i>Sentenced to Simple Im- prisonment—</i>						
For 1 year and under ...	3,777	257	4,034	3,978	246	4,224
„ 2 years and above } 1 year	222	19	241	415	11	426
„ more than 2 years...	24	—	24	15	—	15
Until security is fur- nished	637	14	651	660	1	661
For life	—	—	—	—	—	—
Total	4,660	291	4,951	5,068	258	5,326
Sentenced capitally	59	6	65	43	7	50
Total convicted.....	32,663	1,251	33,914	40,168	2,208	42,394
Under trial by the } magistrates	836	36	872	724	71	795
Committed to the ses- sions	423	28	451	958	34	992
Referred to the High Court.....	4	1	5	8	7	15
Total	1,263	65	1,328	1,690	112	1,802
Total criminal } population.....	33,926	1,316	35,242	41,876	2,340	44,196
CIVIL PRISONERS.....	1,927	21	1,948	2,218	41	2,259
STATE PRISONERS	—	—	—	—	—	—
<i>Add Discharges—</i>						
By transfer	12,135	614	12,749	13,316	1,005	14,321
By acquittal	21,415	1,203	22,618	25,803	1,403	27,206
Total	33,580	1,817	35,367	39,119	2,408	41,527
Grand total admitted ...	69,458	3,159	72,617	83,264	4,776	88,040

Exclusive of those who Remained in Custody from the Preceding Year.

1867.			1868.			1869.			Classes and Sentences of Prisoners.
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
20,132	1,073	21,205	21,533	861	23,394	18,373	1,101	19,473	CRIMINAL PRISONERS. <i>Sentenced to Rigorous Imprisonment—</i> For 1 year and under { " 2 years and above 1 year { " more than 2 years { Until security is furnished For life
2,792	85	2,877	2,729	68	2,797	2,001	121	2,122	
3,455	103	3,558	3,296	57	3,953	5,610	140	5,750	
81	2	83	93	1	94	327	18	345	
437	45	482	455	42	497	513	70	583	
26,897	1,308	28,205	28,106	1,029	29,135	26,824	1,450	28,274	Total
2,879	592	3,471	3,738	160	3,898	5,218	235	5,453	<i>Sentenced to Simple Imprisonment—</i> For 1 year and under { " 2 years and above 1 year { " more than 2 years { Until security is furnished For life
129	8	137	206	7	213	721	38	759	
20	—	20	7	1	8	28	10	38	
288	1	289	601	8	609	1,098	57	1,155	
11	—	11	1	—	1	—	—	—	
3,327	601	3,928	4,553	176	4,729	7,065	340	7,405	Total
8	—	8	34	—	34	47	7	54	Sentenced capitally
30,282	1,909	32,191	32,693	1,205	33,898	33,936	1,797	35,733	Total convicted
750	29	779	717	20	737	—	—	—	{ Under trial by the magistrates { Committed to the sessions { Referred to the High Court
363	14	377	331	18	349	—	—	—	
3	—	3	11	—	11	—	—	—	
1,116	43	1,159	1,059	38	1,097	1,438	67	1,505	Total
31,348	1,952	33,300	33,752	1,243	34,995	35,374	1,864	37,238	Total criminal population
1,871	42	1,913	1,743	49	1,792	2,140	67	2,207	CIVIL PRISONERS
—	—	—	6	—	6	24	—	24	STATE PRISONERS
9,191	612	9,803	7,618	610	8,228	8,484	403	8,887	<i>Add Discharges—</i> By transfer
20,899	1,122	22,021	18,844	970	19,814	15,605	768	16,373	By acquittal
30,090	1,734	31,824	26,462	1,580	28,042	24,089	1,171	25,260	Total
63,309	3,728	67,037	61,963	2,872	64,835	61,627	3,102	64,729	Grand total admitted

TABLE II.—Releases from all Causes, except Death and Escape.

	1865.	1866.	1867.	1868.	1869.
Acquitted after trial by the magisterial authorities.....	23,021	35,306	21,875	19,249	} 21,096
Acquitted after trial by the sessions courts	1,703	2,617	2,279	2,051	
Acquitted by the high court	150	282	126	135	
Liberated by order of Government	22	36	652	135	
Released on expiry of sentence	30,420	31,800	30,709	27,759	29,461
„ on payment of debts....	2,695	2,837	2,267	2,238	2,215
„ for exemplary conduct	—	—	—	—	6
„ on account of sickness	19	44	42	30	57

TABLE III.—The Religions of the Persons Committed to Prison were as follow :

Religion.	1865.	1866.	1867.	1868.	1869.
Hindus	44,007	55,483	36,071	39,896	37,533
Mahommedans.....	23,531	34,447	27,613	20,956	22,096
Other native sects, viz.— Sonthals, Cacharees, Ahoms, Konchs, Nepau- lese, Hill Men, Dhanghas, Bhooteahs, Colis, Garrows, &c.	3,222	4,720	2,556	3,093	4,166
Christians	1,769	1,271	797	890	934
Total	72,167	95,951	67,037	64,835	36,795

TABLE IV.—Education. State of Instruction of the Prisoners Convicted in the Years mentioned.

Years	Fairly Educated for their Position in Life.				Able to Read and Write.				Entirely Uninstructed.				Whole Number Com- mitted in each Year.
	Number.			Pro- portion per Cent. to Whole Number Com- mitted.	Number.			Pro- portion per Cent. to Whole Number Com- mitted.	Number.			Pro- portion per Cent. to Whole Number Com- mitted.	
	Males.	Fe- males.	Total.		Males.	Fe- males.	Total.		Males.	Fe- males.	Total.		
1865	391	—	391	0·53	5,676	11	5,687	7·83	63,391	3,148	66,539	91·63	72,617
'66	324	—	324	0·34	5,367	17	5,384	5·61	85,075	5,168	90,243	94·05	95,951
'67	154	—	154	0·93	5,094	56	5,150	7·68	58,061	3,672	61,733	92·09	67,037
'68	604	—	604	0·23	5,238	39	5,277	8·14	56,121	2,833	58,954	90·93	64,835
'69	481	5	486	0·75	5,518	127	5,645	8·72	55,626	2,972	58,598	90·53	64,729

TABLE V.—Deaths in Relation to Sex.

Years.	Daily Average Number in Custody.		Deaths.		Ratio per 1,000.		Ratio per 1,000.
	Males.	Females.	Males.	Females.	Males.	Females.	Males and Females Combined.
1865	18,118	724	1,091	31	60·20	42·80	59·50
'66	21,179	972	2,273	74	107·30	76·10	105·90
'67	19,288	895	1,142	45	50·92	50·02	58·88
'68	18,674	952	952	30	50·09	40·05	50·05
'69	18,926	772	989	40	50·15	50·01	51·50

TABLE VI.—Deaths in Relation to Age per 1,000 of each Class.

Ages.	1865.					1866.				
	Average Daily Number in Custody, of each Age.	Deaths.		Ratio of Mortality.		Average Daily Number in Custody.	Deaths.		Ratio of Mortality.	
		From Cholera, Diseases of Nutrition, and Violence.	From Or-dinary Diseases	From Cholera, &c.	From Or-dinary Diseases.		From Cholera, Diseases of Nutrition, and Violence.	From Or-dinary Diseases.	From Cholera, &c.	From Or-dinary Diseases.
Under 20 years	1,070	1	15	9·00	14·00	1,213	11	25	9·00	20·60
20 and under 30	3,299	45	145	13·60	43·90	5,144	145	230	28·20	44·70
30 „ 40	4,971	92	331	18·40	66·60	5,822	246	463	42·20	79·50
40 „ 50	3,541	51	181	14·40	57·10	4,732	144	402	30·40	84·90
50 „ 60	2,540	21	115	8·20	45·30	2,830	149	258	52·60	91·20
60 „ 70	1,681	9	79	5·40	46·90	1,396	68	100	48·70	71·60
70 „ 80	1,129	5	20	4·40	17·70	749	21	57	28·40	77·00
80 and upwards	612	2	10	3·30	16·30	274	12	16	43·80	58·30
Total	18,842	226	896	12·00	47·50	22,181	796	1,551	35·90	70·00

Ages.	1867.					1868.					1869.
	Daily Average Number in Custody.	Deaths.		Ratio of Mortality.		Daily Average Number in Custody.	Deaths.		Ratio of Mortality.		Ratio per 1,000 of Deaths* at each Age from all Causes.
		From Cholera, Diseases of Nutrition, and Violence.	From all other Diseases.	From Cholera, &c.	From all other Diseases.		From Cholera, Diseases of Nutrition, and Violence.	From all other Diseases.	From Cholera, &c.	From all other Diseases.	
Under 20 years	851	7	6	8·20	7·00	933	5	11	5·30	11·80	17·10
20 and under 30	6,411	47	163	7·30	25·40	5,397	31	137	5·70	25·40	31·10
30 „ 40	6,815	66	344	9·60	50·50	5,990	40	277	6·70	46·20	52·90
40 „ 50	3,156	28	234	8·90	74·41	3,836	21	194	5·50	50·50	56·60
50 „ 60	1,856	15	140	8·10	75·40	1,939	13	115	6·80	59·20	66·00
60 „ 70	741	13	81	17·50	109·30	913	12	88	13·10	96·40	109·50
70 „ 80	312	3	31	9·60	99·30	345	2	25	5·70	72·50	78·20
80 and upwards	41	—	9	—	219·50	60	1	10	16·60	166·70	183·30
	20,183	179	1,008	8·90	49·90	19,413	125	857	6·40	44·51	51·50

* The details cannot be given, as they were suppressed on economical grounds.

TABLE VII.—*Summary of the Statistics of Sickness and Mortality*

Gaols.	Years.	Daily average Strength or Mean Population in Gaol.	Numbers Sick.			Deaths.		
			From Cholera only.	From all other Diseases exclusive of Cholera.	Total from Cholera and all other Diseases.	From Cholera only.	From all other Diseases exclusive of Cholera.	Total of Cholera and all other Diseases.
I.—Patna Division.								
Meeta pore	1844-68	19,546	1,136	21,531	22,667	402	1,063	1,465
Deegah	'61-68	2,888	223	2,717	2,940	86	219	305
Sarun	'44-68	11,632	553	13,673	14,226	177	757	934
Gya	'44-68	16,423	498	20,025	20,523	196	1,464	1,660
Shahabad	'44-68	13,338	760	10,650	11,410	230	870	1,100
Chumparun	'44-68	6,399	242	8,697	8,939	93	467	560
Tirhoot	'44-68	11,381	899	21,357	22,256	346	928	1,274
II.—Bhaugulpore Di- vision.								
Bhaugulpore	1844-68	11,021	1,342	14,850	16,192	608	1,173	1,781
Monghyr	'44-68	14,111	782	22,044	22,826	284	1,314	1,598
Purneah	'44-68	10,893	873	11,860	12,733	411	704	1,115
III.—Rajshahye Di- vision.								
Rajshahye	1844-68	15,422	629	15,578	16,207	326	896	1,222
Pubna	'44-68	5,800	152	8,753	8,905	55	263	318
Rungpore	'44-68	10,497	150	15,549	15,699	54	1,131	1,185
Bograh	'44-68	4,977	154	8,137	8,291	48	254	302
Dinagepore	'44-68	15,027	467	24,412	24,879	217	1,312	1,529
Maldah	'44-68	2,674	144	5,150	5,294	54	108	162
Moorshedabad	'44-68	8,814	343	2,381	2,724	160	615	775
IV.—Dacca Division.								
Dacca	1844-68	16,326	205	21,035	21,240	105	531	636
Furreedpore	'44-68	10,369	122	18,189	18,311	25	304	329
Sylhet	'44-68	10,793	525	17,748	18,273	208	560	768
Mymensing	'44-68	11,738	228	22,447	22,675	92	722	814
Backergunge	'44-68	13,828	1,744	14,721	16,465	380	910	1,290
V.—Chittagong Di- vision.								
Chittagong	1844-68	8,288	230	9,761	9,991	132	391	523
Tipperah	'44-68	11,516	156	17,762	17,918	87	479	566
Noakholly	'44-68	6,192	77	10,290	10,367	42	126	168
VI.—Nuddea Division.								
Nuddea	1844-68	11,578	69	15,602	15,671	15	354	369
Alipore	'44-68	45,780	1,058	56,639	57,697	394	3,539	3,933
Russa	'46-68	8,597	187	12,624	12,811	49	528	577
Baraset	'44-68	5,426	88	8,491	8,579	20	225	245
Jessore	'44-68	17,256	608	26,982	27,590	161	605	766

in all the Gaols in the Lower Provinces, from 1844 to 1868.

Sickness-rates.			Death-rates.							Gaols.
Ratio per Cent. of Sick from Cholera to Mean Popula- tion in Gaol.	Ratio per Cent. of Sick from all other Diseases to mean Population in Gaol.	Ratio per Cent. of Total Number Sick to Mean Population in Gaol.	Ratio per Cent. of Deaths.							
			From Cholera only.		From all other Diseases exclusive of Cholera.		From Cholera and all other Diseases.			
			To Mean Popula- tion in Gaol.	To Number Sick.	To Mean Popula- tion in Gaol.	To Number Sick.	To Mean Popula- tion in Gaol.	To Number Sick.		
5.81	110.15	115.96	2.05	35.38	5.44	4.93	7.49	6.47	I.— <i>Patna Division.</i>	
7.72	94.08	101.80	2.98	38.56	7.58	8.06	10.56	10.37	Meetapore	
4.75	117.55	122.30	1.52	32.01	6.50	5.53	8.02	6.56	Deegah	
3.03	121.93	124.96	1.19	39.36	8.91	7.39	10.10	8.08	Sarun	
5.69	79.85	85.54	1.72	30.26	6.58	8.16	8.24	9.72	Gya	
3.17	135.91	139.69	1.45	38.43	7.30	5.37	8.75	6.26	Shahabad	
7.90	187.65	199.55	3.04	38.48	8.15	4.34	11.19	5.07	Chumparun	
									Tirhoot	
									II.— <i>Bhaugulpore Di- vision.</i>	
12.17	134.74	116.91	5.52	45.31	10.64	7.72	16.16	10.99	Bhaugulpore	
5.54	156.22	161.76	2.01	36.31	9.31	5.96	11.32	7.00	Monghyr	
8.01	108.88	116.89	3.77	47.07	6.45	5.93	10.23	8.75	Purneah	
									III.— <i>Rajshahye Di- vision.</i>	
4.07	101.01	105.08	2.11	51.82	5.81	5.75	7.92	7.54	Rajshahye	
2.62	150.91	153.53	.94	36.18	4.53	3.00	5.47	3.57	Pubna	
1.43	148.12	149.55	.51	36.00	10.77	7.27	11.28	7.54	Rungpore	
3.10	163.49	166.59	.96	31.16	5.10	3.12	6.06	3.64	Bograh	
3.11	162.45	165.56	1.44	46.46	8.73	5.37	10.17	6.14	Dinagapore	
5.39	192.59	197.98	2.02	37.50	4.03	2.09	6.05	3.05	Maldah	
3.89	27.01	30.90	1.82	46.64	6.97	25.83	8.79	28.45	Moorshedabad	
									IV.— <i>Dacca Division.</i>	
1.25	128.84	130.09	.64	51.82	3.25	2.52	3.89	2.99	Dacca	
1.17	175.42	176.59	.24	20.49	2.93	.16	3.17	.18	Furreedpore	
4.86	164.44	169.30	1.92	39.77	5.19	3.15	7.11	4.20	Sylhet	
1.94	191.23	193.17	.78	40.35	6.15	3.21	6.93	3.59	Mymensing	
12.61	106.46	119.07	2.74	21.78	6.59	6.18	9.33	7.83	Backergunge	
									V.— <i>Chittagong Di- vision.</i>	
2.77	117.77	120.54	1.59	57.39	4.72	4.00	6.31	5.23	Chittagong	
1.35	154.24	155.59	.75	55.77	4.16	2.69	4.91	3.15	Tipperah	
1.24	166.18	167.42	.68	54.54	2.03	1.22	2.71	1.62	Noakholly	
									VI.— <i>Nuddea Division.</i>	
.59	134.76	135.35	.12	21.74	3.05	2.27	3.17	2.35	Nuddea	
2.31	123.72	126.03	.86	37.24	7.73	6.24	8.59	6.78	Alipore	
2.17	146.84	149.01	.56	26.20	6.14	4.18	6.70	4.54	Russa	
1.62	158.33	159.95	.37	22.73	4.14	2.65	4.51	2.85	Baraset	
3.52	156.36	159.88	.93	26.48	3.51	2.24	4.44	2.77	Jessore	

TABLE VII.—*Summary of the Statistics of Sickness and Mortality*

Gaols.	Years.	Daily average Strength or Mean Population in Gaol.	Numbers Sick.			Deaths.		
			From Cholera only.	From all other Diseases exclusive of Cholera.	Total from Cholera and all other Diseases.	From Cholera only.	From all other Diseases exclusive of Cholera.	Total of Cholera and all other Diseases.
VII.— <i>Burdwan Division.</i>								
Burdwan	1844-68	13,108	520	22,164	22,684	153	702	855
Hooghly	'44-68	14,828	1,406	28,192	29,598	472	1,247	1,719
Howrah	'52-68	2,108	55	3,690	3,745	14	178	192
Bancorah	'44-68	11,477	384	14,437	14,821	118	301	419
Beerbhoom	'44-69	9,346	192	10,039	10,231	99	471	570
Midnapore	'44-68	17,326	770	27,165	27,935	359	830	1,189
VIII.— <i>Cuttack Division.</i>								
Cuttack	1844-68	8,819	347	12,850	13,197	171	633	804
Balasore	'44-68	4,453	161	9,112	9,273	75	249	324
Pooree	'44-68	2,521	141	7,387	7,528	52	172	224
IX.— <i>Chota-Nagpore Division.</i>								
Hazaree- baugh { Centrl. gaol	1867-68	1,294	5	841	846	—	45	45
ree- { District „	'44-68	11,822	459	16,621	17,080	211	646	857
baugh { Euro. pnty.	'65-68	118	—	188	188	—	1	1
Lohardugga	'44-68	7,577	171	13,846	14,017	99	741	840
Maunbhoom	'44-68	6,668	465	9,648	10,113	276	498	774
Singhbhoom	'44-68	3,966	256	8,478	8,734	164	277	441
X.— <i>Assam Division.</i>								
Gowalparah	1844-68	3,800	244	6,127	6,371	145	325	470
Kamroop	'44-68	4,484	282	7,371	7,653	142	395	537
Nowgong	'44-68	2,580	74	3,532	3,606	34	101	135
Sebsaugor	'44-68	2,534	35	4,494	4,529	14	184	198
Durrung	'44-68	4,403	79	7,382	7,461	40	166	206
Debrooghur	'44-68	2,288	79	5,183	5,262	34	135	169
Kassiah Hills	'44-68	1,932	20	2,601	2,621	16	139	155
XI.								
Cachar	1844-68	2,398	130	4,057	4, 87	82	121	203
Darjeeling	'52-68	8,106	6	1,578	1,584	5	71	76
XII.— <i>Rajmehal Division.</i>								
Rajmehal	1863-68	813	74	1,302	1,376	31	25	56
Pakour	'63-68	117	—	249	249	—	5	5
Nya-Doomka	'63-68	280	3	265	268	2	8	10
Deoghur	'63-66	370	5	632	637	4	20	24
Godda	'63-68	200	3	227	230	1	3	4
XIII.— <i>Presidency Division.</i>								
Presidency { Natives ...	1855-68	8,039	209	14,771	14,980	35	380	415
gaol { Europeans	'55-68	1,617	57	5,366	5,423	21	26	47
Total	—	510,573	21,276	729,450	750,726	8,326	31,907	40,233

in all the Gaols in the Lower Provinces, from 1844 to 1868—Contd.

Sickness-rates.			Death-rates.						Gaols.
Rate per Cent. of Sick from Cholera to Mean Population in Gaol.	Ratio per Cent. of Sick from all other Diseases to Mean Population in Gaol.	Ratio per Cent. of Total Number Sick to Mean Population in Gaol.	Ratio per Cent. of Deaths.						
			From Cholera only.		From all other Diseases exclusive of Cholera.		From Cholera and all other Diseases.		
			To Mean Population in Gaol.	To Number Sick.	To Mean Population in Gaol.	To Number Sick.	To Mean Population in Gaol.	To Number Sick.	
3·96	169·09	173·05	1·17	29·42	5·35	3·17	6·52	3·77	VII.— <i>Burdwan Division.</i>
9·48	190·12	199·60	3·18	33·57	8·41	4·42	11·59	5·88	Burdwan
2·60	175·05	177·65	·66	25·45	8·44	4·82	9·10	5·13	Hooghly
3·34	125·79	129·13	1·02	30·73	3·32	2·64	4·34	3·37	Howrah
2·05	107·41	109·46	1·06	51·56	5·03	4·68	6·09	5·57	Bancorah
4·44	156·78	161·22	2·07	46·62	4·79	3·05	6·86	4·25	Beerbhoom
									Midnapore
									VIII.— <i>Cuttack Division.</i>
3·93	145·71	149·64	1·94	49·28	7·17	4·92	9·11	6·09	Cuttack
3·62	204·64	208·24	1·68	46·58	5·79	2·73	7·27	3·49	Balasore
5·59	293·02	298·61	2·06	36·88	6·82	2·32	8·88	2·96	Pooree
									IX.— <i>Chota-Nagpore Division.</i>
·39	64·98	65·37	—	—	3·47	5·35	3·47	5·35	Central gaol
3·88	140·59	144·47	1·78	45·96	5·46	3·38	7·24	5·01	Haza-
—	100·00	100·00	—	—	·85	·53	·85	·53	District „ } ree-
2·25	182·74	184·99	1·31	57·89	9·78	5·35	11·09	5·99	Euro. pnty. } baugh
6·97	144·69	151·66	4·14	59·35	7·46	5·16	11·60	7·65	Lohardugga
6·45	213·77	220·22	4·13	6·40	6·99	3·26	11·12	5·04	Maunbhoom
									Singhbhoom
									X.— <i>Assam Division.</i>
6·42	161·23	167·65	3·82	59·42	8·54	5·36	12·36	7·37	Gowalparah
6·29	164·38	170·67	3·17	50·35	8·80	5·36	11·97	7·01	Kamroop
2·87	136·89	139·76	1·32	45·94	2·91	2·86	5·23	5·74	Nowgong
1·88	177·34	178·72	·55	40·00	7·26	4·09	7·81	4·37	Sebsaugor
1·79	167·66	169·45	·90	50·63	3·77	2·24	4·67	2·76	Durrung
3·45	226·53	229·98	1·48	43·03	5·90	2·60	7·38	3·21	Debrooghur
1·03	134·63	135·66	·83	80·00	7·19	5·34	8·02	5·95	Kassiah Hills
									XI.
5·44	169·82	175·26	3·43	63·07	5·06	2·98	8·49	4·84	Cachar
·74	195·79	196·53	·62	83·33	8·80	4·49	9·42	4·79	Darjeeling
									XII.— <i>Rajmehal Division.</i>
9·10	160·51	169·61	3·81	41·88	3·07	1·92	6·88	4·07	Rajmehal
—	220·35	220·35	—	—	4·27	2·00	4·27	2·00	Pakour
1·08	94·63	95·71	·71	66·66	2·86	3·43	3·57	3·76	Nya-Doomka
1·35	170·81	172·16	1·08	80·00	5·40	3·16	6·48	3·76	Deoghur
1·50	113·50	115·00	·50	33·33	1·50	1·32	2·00	1·74	Godda
									XIII.— <i>Presidency Division.</i>
2·60	183·74	186·34	·43	16·74	4·73	2·57	5·16	2·77	Natives } Presidency
3·52	331·85	335·37	1·29	36·84	1·61	·48	2·90	·86	Europeans } gaol
4·17	142·87	147·04	1·63	39·13	6·25	4·38	7·88	5·36	Total

Non-regulation Provinces.

Non-regulation Provinces.

TABLE VIII.—*Deaths in Relation to Religion.*

Years.	Ratio per 1,000 of Deaths among each Class.											
	Christians.			Hindus.			Mussulmans.			Other Denominations.		
	Average Daily Number in Gaol.	Deaths.	Ratio.	Average Daily Number in Gaol.	Deaths.	Ratio.	Average Daily Number in Gaol.	Deaths.	Ratio.	Average Daily Number in Gaol.	Deaths.	Ratio.
1865	324	4	12·30	13,794	742	53·70	4,072	340	83·40	652	36	55·20
'66	202	9	44·50	14,273	1,680	117·70	6,844	478	69·80	832	180	216·30
'67	180	6	33·30	11,767	852	72·40	6,782	293	43·20	1,454	36	24·70
'68	195	9	46·10	11,030	591	53·50	6,991	371	53·00	1,197	11	9·10
'69	*	5	35·35	*	606	48·60	*	383	66·60	*	35	23·70

* The Government, in a fit of economy, directed me to curtail the extent of the tabular statements appended to my report. I am unable, in consequence, to give the exact daily average of each class in custody in 1869. The calculations were made with great care and minuteness, but were not published, and I have no longer access to them.

TABLE IX.—*Gross and Net Cost of Prisoners in the Years mentioned.*

Years.	Average Daily Number of Prisoners.	Gross Cost of Maintenance.					Average Gross Cost per Prisoner.	Deduct Income of Gaol from all sources.	Net Cost of Maintenance.	Average Net Cost per Prisoner.
		Cost of Food, Clothing, Executive and Warder Establishments.	Cost of Civil Constabulary.	Cost of Public Works Executed by Public Works Department.	Cost of General Superintendence.	Total.				
1865–66	18,803	£ 90,034	£ 16,113	£ 19,260	£ 4,039	£ 129,447	£ s. 6 17	£ 35,217	£ 94,230	£ s. 5 –
'66–67*	22,704	86,052	16,871	16,727	1,376	118,028	5 12	35,855	92,173	4 1
'67	20,183	104,520	22,678	20,217	4,224	151,641	7 10	44,080	107,561	5 6
'68	19,227	97,118	21,182	Not known.	4,657	122,958	6 7	57,320	65,838	3 8
'69	19,788	105,676	19,109	„	4,369	129,154	6 10	46,588	82,566	4 1

* In this table is not included the interest on the capital expended on the buildings, as it could not be ascertained. It would probably have increased the gross and net cost by 10 per cent. all round.

On the Colonies. By ARCHIBALD HAMILTON.

[Read before the Statistical Society, 19th March, 1872.]

CONTENTS :

	PAGE		PAGE
I.—Colonial Office Policy	107	VIII.—Colonial Tariffs	119
II.—Exports of Home Produce	108	IX.—In case of War	120
III.—Shipping	114	X.—Arguments of Sentiment	121
IV.—Colonists who Return	114	XI.—Conclusion	122
V.—Emigration	115		
VI.—Advantages to the Colonies	116	APPENDIX.	
VII.—Cost of the Colonies	117	Tables A to F	123

OUR Colonial Empire, which not long since was regarded by ourselves with so much pride, and by our rivals with no small envy, has of late years been viewed with a degree of apathy by the public which is equally undeniable and extraordinary. A small but energetic party have even maintained that the colonies are a source of weakness and embarrassment, and openly contend for “retrenching” the empire. The settled opinion of the great majority of politicians and public writers seems to be that separation sooner or later is inevitable. While successive Cabinets, Liberal as well as Conservative, resigning themselves to the same fatality, have been content that their colonial policy should have no higher aim than that separation, when it comes, should take place with peace and good-will.

I.—*Colonial Office Policy.*

Assuredly nothing has been done to ward off separation. So far from any endeavour to strengthen and confirm the ties between the colonies and the home country, the tendency of our policy has been rather to prepare the colonies for separation, if not actually to invite them to declare their independence. I should rather say that such has been the policy of the Colonial Office. In theory, no doubt, our Minister for the Colonies rules the Colonial Office, and is responsible to Parliament and the public; but in reality, what with frequent changes in the Ministry, the pressure of business in the House of Commons, public attention absorbed by questions nearer home, added to the general ignorance of, and indifference to colonial matters, it so happens that the permanent staff of the Colonial Office is, for all practical purposes, almost free from any check or control.

The waste lands have been handed over, unfortunately without any reservation; full control over their own affairs has very properly been conceded to the North American and Australian

colonies, but with no thought as to how the imperial connection is to continue ; and at the present time the Cape colonists are in vain solicited to accept responsible government. At the same time the chief object of the Colonial Office, without regard to varying circumstances in each case, has been to withdraw British troops from the colonies, and, at all hazards, reduce their cost to the British Exchequer ; so that our relations with the colonies have at length become so attenuated, that a very slight strain with any one of them will suffice to break the tie ; and it is only too probable that the separation of one, would be the signal for others to assume independence, or, it may be, to seek some other protection.

Before resigning ourselves to this, it surely would be well that such a vital question should be examined to the bottom, and be thoroughly discussed in all its manifold bearings, so that we should deliberately satisfy ourselves whether it is in reality a matter of such little consequence, that our connection with the colonies should be maintained ; or whether it would not be wiser rather to seek for some means whereby we could draw them closer to us than ever.

II.—*Exports of Home Produce.*

My object, therefore, in venturing to discuss this question will be to confine myself mainly to its economical aspect, and to examine the commercial statistics—though I am far from undervaluing those other considerations which cannot be overlooked, but to which I shall only very briefly allude.

In the first place, then, it may be well to bear in mind that the benefit of our foreign and colonial trade is not confined to the mere profit of the merchants exporting, as is too frequently assumed, but consists really in the sum total of the exports of British produce and manufactures. So that, when we find their total value amounted, for the year 1871, to no less than two hundred and twenty-two millions sterling (222,000,000*l.*), we are to consider that sum as, in point of fact, constituting so much of the wages and profits, or aggregate income of the people of this country ; the foreign and colonial trade being the source from whence so much of their means of livelihood, or daily bread, is derived.

Payment is received in the commodities imported in exchange for our produce exported, and it is on those operations that our merchants receive their profits.

Of the large total just mentioned, our colonies, possessions, and dependencies of all kinds, contributed (51,000,000*l.*) fifty-one millions sterling ; and as it is important that this amount shall be shown to be so much added to the aggregate earnings of the people of this country, I shall follow up the subject in some detail.

This is self-evident as to exports of purely home produce, such

for example as Birmingham hardware—from the digging out of the metal until it is smelted, manufactured, packed, conveyed by rail, and stowed on board a ship; all the profits, commissions, and wages arising from those operations are so much added to the earnings of the manufacturers, agents, artisans, and labourers who did the work; in short, all costs and charges, until shipped, are defrayed by the merchant who exports the goods. The same thing applies to goods which are manufactured from imported raw materials, though at first sight it might be contended that we should deduct the value of the raw material. But, inasmuch as the raw material can only be imported in exchange for our exports, it thereby acquires the character of a British product, the same as though it were bars of English iron. Nevertheless, as this conclusion may be open to question, there are other items to be considered in connection with the colonial trade, which will far outweigh the cost of raw material in our home manufactures exported thither.

1st. Foreign goods, to the value of nine or ten millions per annum, are sent here for transhipment, but the benefit resulting therefrom consists merely in agency, together with dock and shipping charges. Moreover, the proportion to the colonies is not considerable.

2nd. The ports of the United Kingdom are entrepôts for foreign and colonial produce, of which about fifty millions sterling per annum are re-exported, and of this amount the colonies take about four millions. On these operations, in addition to the charges above mentioned, there adheres to this country the merchant's profit or commission, brokerages, &c.

3rdly. There are very important indirect operations with the colonies. For example: shipments of Manchester goods are made to China, with orders for returns to be sent in tea direct to Canada. Sugar, coffee, and bulky goods in general go, as a rule, from the place of production direct to the colonies, under credits furnished by our merchants—or, in other words, are eventually paid for by exports from this country. Now, on all such indirect operations, the amounts of our exports in payment, if they could be traced out with any degree of accuracy, should be placed to the credit of the colonies, rather than to the countries supplying the rough goods.

4thly. The exporting merchant's profit or commission is a benefit accruing to this country which must not be omitted.

Taking these items together, it will be admitted by every one conversant with the subject, that they far outweigh the cost of raw materials in our home manufactures sent to the colonies; and that I am, therefore, well within the mark in claiming credit for the colonies to the full extent of our home produce exported to them; and that the amount should be taken as so much added to the earnings or aggregate income of the United Kingdom.

I have stated that the total to our dependencies for 1871 amounted to 51,000,000*l.*, but shall confine myself to our colonies proper, viz., North American, Australian, and South African, together with our tropical settlements in the West Indies, Mauritius, Ceylon, and the Straits; and with these I have contrasted our trade with the principal foreign countries. I leave out of consideration our Indian Possessions, since these cannot be regarded as colonies, and because I take for granted that our supremacy in that country will be upheld by the strong hand so long as we retain the power; neither for the present shall I concern myself with our naval and military stations, such as Malta, Gibraltar, Bermuda, Hong Kong, &c., which are maintained for imperial purposes.

In Appendix, Table A, will be found the exports of British produce for thirty years from 1840 to 1869 inclusive, reduced for the sake of convenience to quinquennial averages. I commence with 1840, so as to include a period of five years prior to our final adoption of free trade, when reciprocity in discriminating duties between the home country and the colonies was abolished. An examination of the table will show that, taking averages of ten years, our exports of home produce have increased in the following ratio:—

	1850 to 1869, Increase per Cent. upon 1840 to 1849.	1860 to 1869, Increase per Cent. upon 1850 to 1859.
North American Colonies	49	63
Australia and New Zealand ...	509	39
Cape and Natal	144	45
West Indies	11 decr.	41
Mauritius	54	22
Ceylon	90	111
Straits and Singapore	48	97
United States	147	3 decr.
France	67	131
Spain and Portugal	61	61
Germany and Austria	56	65
Italy	37	77
Russia	7 decr.	105
Holland	42	67
Belgium	25	77
Brazil	52	49
China with Hong Kong.....	50	167

In Appendix, Table B, I have taken out the consumption of British produce by the several colonies and foreign countries above named. For the population I take the years of census, but for the exports I have averaged three years, viz., the year of census with the preceding and succeeding years, so as to obtain a fair result,

free from special circumstances which might attach to single years; and in order still further to elucidate the matter I have, in Table C, ascertained the proportion which British produce bears to the total imports of the same places; for this purpose I have taken an average of the three years, 1864-66, being the latest uniform period for which I can obtain a comparison.

The results of Tables B and C are shortly stated below. It will be observed that the figures are greatly in favour of the colonies proper, as might be expected with infant communities, occupied chiefly in the production of raw produce. This applies to the United States, for the same reason, though in a lesser degree; while the tropical settlements rank next to the colonies proper.

	Consumption of British Produce per Head.			Proportion of British Produce to Total Imports.
	£	s.	d.	Per cent.
North American Colonies	1	5	8	42
Australia and New Zealand	8	10	3	47
Cape and Natal { total population	2	6	4	} 69
{ white "	8	12	2	
West Indies	2	8	7	43
Mauritius	1	14	7	30
Ceylon	Small European population			} 36
Straits				
	"			21
United States	—	12	10	31
France	—	6	—	9
Spain	—	2	1	18
Portugal	—	10	4	—
Germany (Prussia, Hamburg, and Austria)	—	6	11	Not ascertainable
Italy	—	4	3	17
Russia	—	—	11	17
Holland*	2	16	2	10
Belgium†	—	11	10	8
Brazil	—	11	2	Not ascertainable

* A proportion of this no doubt belongs to Germany, being for goods in transit, and the British produce is not distinguishable.

† Belgium probably shows in excess for the same reason.

But it is alleged that our trade with the colonies would not be affected, were they at once to be declared independent States; and Mr. Goldwin Smith has argued that it would rather be increased thereby. He appeals to the example of the United States in support of this opinion, but overlooks the totally different circumstances under which our trade with the colonies is now carried on, as compared with the jealous monopoly which existed when the United States became independent. I need scarcely recall Lord Chatham's well-known declaration, that "the colonists had no right

“to manufacture even a nail for a horse-shoe.” They were bound to buy from the mother country whatever they consumed, and to sell to her whatever they produced. It was not in consequence of their separation that our trade with the United States subsequently increased; but it was because, together with independence, they established freer commercial relations with other countries as well as with ourselves.

Now, as our colonies already enjoy the advantages of free trade to the fullest extent, except so far as it may be stinted by tariffs of their own imposition, and as they also enjoy the most absolute control of their own affairs, it is manifest that there are no grounds for expecting a rapid increase in their trade, such as followed on the independence of the United States. On the contrary, though the colonial trade might not at first be materially affected, provided always that separation took place in a friendly spirit, there is too much reason to fear that the ratio of increase would not be sustained, and might altogether disappear.

The maxim that “the trade follows the flag” is supported by the examples of our conquered colonies, viz.:—

In Canada there are about one million, or nearly one-third of the population, of French descent, living much apart in Lower Canada, and retaining their language and customs to a remarkable extent; and although during the last thirty years there have been no discriminating colonial duties between British and French produce, the importations for the year 1866 were respectively as follows:—

	£
British produce	5,000,000
French „ „	250,000

Similarly, as regards the Cape of Good Hope, where the European population numbered about 180,000, of whom two-thirds are of Dutch extraction, speaking their own language and adhering to their own manners and customs with extraordinary tenacity—taking an average of the years 1864-66, the importations stand thus—

	£
British produce per annum	1,760,000
Dutch produce direct.....	£6,000
Through United Kingdom in bond.....	20,000
	<hr/> 26,000

Again, if we examine the returns from Mauritius, where the Creole population is still essentially French, the figures stand as follows, taking an average of the years 1864-66:—

	£
British produce per annum	523,000
French „ „	362,000

It is to be observed, however, that of the latter no less than 116,000*l.* consisted of wines and brandy, the wine being a special

production of France, and peculiarly suited to the climate and taste of the people.

Conversely, no one can doubt, had we retained possession of Java, that our trade with that island would now be ten times what it is.

Let us next consider in what manner our trade with the colonies is influenced by their connection with the home country. It is a matter of every day experience that young men of the middle or commercial class prefer the colonies, when looking around for a field in which to push their way in the world. In the colonies they settle among friends and relations, where English law and English ideas and customs prevail; and it is by this class more especially that our commerce is extended. They readily enter into business correspondence with their friends at home, and become the channel through which British capital is more freely embarked in the colonies than in foreign countries. Again, colonists more frequently intermarry with people at home than with foreigners. I have been assured on competent authority that marriages between Canadians and their American neighbours, are not much more frequent than marriages between ourselves and French or Germans. Moreover, most of us have relatives settled in the various colonies; so that, in addition to similarity of tastes and general sympathy with the old country, there are innumerable personal and family ties which secure to us a command of the colonial trade, such as is not elsewhere obtained. In fact, it is an aggregate of what, in individual cases, is called trade connection, or "good-will."

I think, therefore, it is reasonable to conclude, that were our connection with the colonies severed, though our trade might not be immediately diminished, still the steady increase it has shown for so many years would be lessened, or might even become stationary—assuming always that the separation took place amicably, and that the colonies became independent States. But let us suppose we part with feelings of discontent, as is only too probable with more than one colony, and that they either seek protection from some other State, or enter into reciprocal treaties to our prejudice: the result would of course be very different.

The truth is, we cannot afford to run the risk of our trade being diminished. Considering that our population is increasing at the rate of 1,000 per day, surely it is only reasonable that we should strive to increase, rather than run the risk of curtailing our means of subsistence. The evils of pauperism and the pressure of poor's rates are already sufficiently appalling. In the commencement of 1871 there were in the United Kingdom no less than 1,280,000 paupers of all sorts, receiving relief at a cost of 8,300,000*l.* And an examination of the returns of "poor's rates and pauperism" will show that, during 1871, there has been a steady decrease,

especially during the latter half of the year; proving unmistakably the influence of the returning prosperity of our export trade; just as the contrary effect is to be traced in the depression which followed on the commercial crisis of 1866. I repeat, therefore, that we cannot afford to tamper with our relations with the colonies, which, relatively to their population, are certainly our best customers.

III.—*Shipping.*

In Appendix, Table D, will be found a statement of the tonnage employed in the trade of the several colonies and foreign states, together with the proportion thereof which consists of British tonnage. I have taken an average of three years where possible, and it will be seen that the colonial percentages greatly exceed the others. I leave the subjoined figures to speak for themselves, viz.:—

North American Colonies, of total tonnage 80 per cent. is British; Australia 93, Cape and Natal 85, West Indies 60, Mauritius 74, Ceylon 87, and Straits 58 per cent.; whereas of the foreign States, the percentage of the United States is 47, France 36, Hanse Towns 36, Italy 23, Russia 34, Holland 49, and Belgium 55.

I would only further remark that, were the colonies independent, these figures might be altered seriously to our prejudice by the adoption of navigation laws.

IV.—*Colonists who Return.*

Apart from the direct and immediate benefit derived from our colonial trade, we must also consider the effect upon ourselves as well as upon the colonies, of the wealthy colonists who return to end their days at home, and spend their fortunes in the old country. This cannot be reduced to an estimate, but, whatever benefit may result to us from this source, it is manifestly due to our connexion with the colonies.

I had imagined that, on the whole, this was rather a praiseworthy, or, at all events, a harmless class of citizens. But Mr. Thorold Rogers, in an essay recently published by the Cobden Club, seems at a loss for terms sufficiently scornful in alluding to them. If it be true that “having become great capitalists they are eager to blot out the memory of the cradle in which their fortunes were nursed,” and “hurry back to their old home, in order that they may achieve social rank,” surely the same thing may be said of Manchester, the cradle of the patron saint of the Cobden Club. Do not successful manufacturers leave their cotton mills, purchase estates, and set up as country squires? and why should they not do so, as well as wealthy colonists? They have equally, by their energy and enterprise, benefitted others as well as themselves in the process of making their fortunes, and the successful colonist,

no less than the Manchester man, generally leaves his capital behind ; so that the industry he may possibly have created is carried on by others, and it is only the expenditure of the colonist's income that is transferred to this country. I am at a loss, therefore, to understand Mr. Rogers' repeated onslaughts upon this class. Were the Cobden essayist also a colonist, he might indeed have reason to complain of the disadvantage to his adopted country; in that so many wealthy men return home rather than remain to form a leisure class in the colony —necessary no doubt for establishing a proper social tone and for the conduct of public affairs. But we must recollect that the Australian colonies, more particularly referred to, have been so recently settled that there has been scarcely time for a generation of native-born colonists to grow up with a natural affection and preference for the country of their birth.

V.—Emigration.

I have next to consider the colonies as a means of absorbing our surplus population, and extract the following particulars from the emigration returns, viz. :—

	Emigrants in 1870.	Totals from 1815 to 1870 inclusive.
To North American colonies	35,295	1,391,771
„ Australian colonies	17,065	988,423
„ other colonies and places	8,505	160,771
	60,865	2,540,965
To the United States	196,075	4,472,672
Grand totals	256,940	7,013,637

It may be admitted, therefore, if we are content to leave emigration to run its course, unaided and undirected, that it would not be much affected by the independence of the colonies ; always excepting the middle or commercial classes, who, as already remarked, go chiefly to colonies.

The bulk of the Irish emigrants go to the United States, where they not only add to the strength of our rivals, but bear with them a feeling of animosity against us so bitter, that the necessity of securing the Irish vote is the main source of all our troubles with our kinsmen in America. Now, it is a strange fact that the Irish who settle in the colonies become comparatively loyal subjects ; and it should, therefore, be the object of the Colonial Office, if possible, to divert some portion of the Irish emigration to the colonies, instead of looking on helplessly while it flows to the United States.

Nay, more, would it not be well to devise such a systematic emigration, as would diminish the poor rates and relieve the struggle

for existence at home, by removing labour from where it is too often superabundant and wages low ;* to the colonies, where employment is abundant, wages are high, and food cheap ? We should thus by one and the same operation lessen the competition for employment at home, and create more work for those who remain behind ; as the emigrant to the colonies at once becomes a large consumer of home produce.

Unfortunately, the Colonial Office has parted with all control over the waste lands, without considering that the people of this country had an interest therein, and that for their benefit, jointly with that of the colonists, the waste lands should have been held in trust. Negotiations might nevertheless be entered into with the colonies for a systematic emigration, and our share of the expense would assuredly be well laid out.

Before quitting the subject of emigration I would refer to a diagram in Table F, which I borrow from Mr. Eddy, representing on a chess board the proportionate area of Great Britain and her dependencies, thus :—

Great Britain and Ireland occupy.....	1 square.
The colonies.....	44 „
India and other dependencies	8 „

VI.—*Advantages to the Colonies.*

Hitherto I have dwelt only on the advantages which the home country derives from the colonies ; and am compelled by want of space merely to glance at some of the more prominent benefits which accrue to the colonies from their connection with Great Britain.

An examination of their commercial returns, in the same form as Tables A, B, and C, would show that the benefit is reciprocal : each contributes largely to the aggregate income of the other. It is, in fact, an operation of exchange, by which both parties are benefitted, inasmuch as the colonists (as shown in Tables B and C), in proportion to their numbers, are the best customers for our manufactures, while we in return are by far the largest purchasers of their produce. Both sides profit by these operations : people in the colonies as well as at home are employed, and earn wages and profits thereby.

The colonists possess all the privileges of British subjects, being citizens of no mean city, which surely is an advantage as compared with the citizenship of small separate states. But there are also what some may consider more tangible advantages, viz., that the colonies enjoy better credit in consequence of the connection, and are able to borrow money on better terms for their public improvements.

Further, as has been already pointed out, British capital is more

* Especially in some of our agricultural districts.

freely embarked through private channels in the colonies than elsewhere, their resources are thereby more speedily and fully developed. In addition to which it is from home that they derive their supply of labour. The colonies, in short, have all the advantages of being connected with a country like Great Britain—a land of industry, wealth, commercial enterprise, and a first-rate power. How different if we suppose them dependencies of Russia, Spain, Italy, or even France.

VII.—*Cost of the Colonies.*

Ever since the Parliamentary Committee of 1861, it has been the policy of our Government to throw the colonies on their own resources for military defence; but without discrimination as to their varying circumstances and antecedents.

In Appendix, Table E, will be found a summary of the cost of the colonies to the imperial exchequer from the year 1853 to 1868, which I have continued by a liberal estimate to the year 1871 inclusive, being nineteen years in all.

I may remark, however, that the parliamentary returns on which Table E is based appear to be open to question. For instance, the sum of 2,990,509*l.* is charged during the nineteen years for gaols, police, and military in Western Australia and Tasmania; but this expense was chiefly, if not altogether, incurred because those colonies were penal settlements, and it must therefore be ascribed to an imperial, and not to a colonial purpose. There is also included in the naval charges for the earlier years, the cost of transport of convicts, which is equally void of justification. I have been unable to test the other items; but the truth is, the returns in question were drawn up, not with a view to recover the money from the colonies, but merely to show the expense this country incurs by reason of, or on account of the colonies. The returns have never, therefore, been properly corrected; but to them, in a great measure, is due the general impression that the colonies are very costly possessions. Nevertheless, I accept the returns as rendered. And how stand the facts?

The exports of British produce, during the nineteen years in question, contrast with the supposed cost of the colonies, as follows, viz.:—

	Total Cost, 1853 to 1871.	Exports of British Produce, 1853 to 1871.
	£	£
North American colonies	13,107,000	107,828,000
Australia and New Zealand.....	10,658,000	214,680,000
Cape and Natal	8,699,000	31,756,000
West Indies	7,679,000	49,022,000
Mauritius	2,132,000	9,401,000
Ceylon.....	1,374,000	12,703,000
Singapore and Straits	161,000	25,408,000
	43,810,000	450,798,000

Now, I must repeat once more, that the amount of the exports of home produce constituted in reality so much of our aggregate income; and it has been variously estimated that in this country we are taxed from 10 per cent. to as high as 20 per cent. on our incomes. I take the lowest estimate, and it follows that the Treasury has, during the nineteen years in question, obtained a revenue of 45,000,000*l.* in consequence of the colonial trade, while the expenditure has not exceeded 43,800,000*l.*

I cannot but regret the present habit of regarding the cost of the colonies exclusively from the Treasury point of view, as though her Majesty's Government were driving a trade in colonies, and as if the result should be judged by the profit and loss shown on the Treasury balance-sheet. Even tried by this test, it will be seen that the colonies have not been burdensome to the imperial exchequer, while they have added four hundred and fifty millions to the earnings of the people of this country.

It would be useless to re-open the discussions as to Caffre and Maori wars: rightly or wrongly, the Colonial Office has determined to withdraw our troops from the Cape and New Zealand, and has also, it is to be presumed, relinquished all idea of interfering with the colonists in their relations with the natives. Had that course always been followed, we should have been saved a great deal of trouble and some money; the colonists would have been spared a great deal of irritation; it is doubtful whether the Maoris would not at this day have been in much the same condition; but the Caffres have undoubtedly benefitted by our benevolent interference in their behalf. It is more to the purpose to consider how the Treasury is affected, now that our troops have been almost wholly withdrawn from the principal colonies. The figures for the year 1871 are these:—

	Cost for 1871.	Exports of Home Produce, 1871.
	£	£
North American colonies	222,400	8,296,000
Australia and New Zealand	239,600	9,034,000
Cape and Natal	168,300	2,198,000
West Indies	350,900	2,940,000
Mauritius	73,500	503,000
Ceylon	23,400	928,000
Straits	36,800	1,935,000
	1,114,900	25,834,000

So that for the year 1871 the Treasury has derived at least 2,580,000*l.* from the colonial trade, and expended 1,100,000*l.*

But it may be urged, in reply, that our trade with foreign States does not entail so much cost as is here shown. What I contend for

is that the colonies are no actual burden to the Treasury, as is very generally assumed;* and, as a set-off for the cost, we enjoy a decided preference in the colonial trade, because of their dependency. But neither is foreign trade carried on free of expense to the Treasury: the cost of the diplomatic and consular services may be ascribed to it, as well as the charge for cruisers to protect our flag.

Again, let us take the Australian colonies as a group, including New Zealand with its Maori wars, of which we have heard so much, and not excluding the two penal settlements above mentioned, and we find the following results:—

	£
Nineteen years exports of home produce	214,680,000
„ cost to exchequer	10,658,000
„ revenue on the exports	21,468,000

Since 1840, it will be seen, from Table A, that our exports of home produce to the Australian colonies have reached the satisfactory total of 238,376,000*l.*; all, be it remembered, so much added to the earnings of the people of this country.

Surely, then, in the face of such results, instead of discussing the “colonial question,” we should rather be taking thought that the great Australian continent is not as yet even fringed with settlements. Having assuredly no reason to regret our past operations in that region, if we could see our way during the next thirty years to plant an equal number of flourishing communities, why should we hesitate? Why should not the Colonial Office justify its title by taking the initiative in such an enterprise?

It will be instructive to watch the course of events in the Fijian Islands, where matters appear to be assuming the same condition as those which preceded the occupation of New Zealand.

VIII.—*Colonial Tariffs.*

The colonists have been vehemently reproached with the duties which they levy on imports. These, no doubt, somewhat affect our trade, and so far as they operate protectively, are even more injurious to the colonies than to ourselves. But we should recollect that they must raise their revenues in the cheapest and least objectionable form. The true theory of taxation is, doubtless, to raise the necessary revenue so as to press equally in all directions, and not interfere with the natural course of industry, any more than if duties or taxes did not exist; but we have not as yet ourselves reached this abstract perfection in our fiscal regulations. We raise 20 millions sterling per annum on tea, sugar, coffee, wines, spirits, and tobacco; and the countries producing those articles might as reasonably complain that we are restricting their trade, as we can reproach the colonists for taxing our produce.

* Suppose for example that the Australian Colonies had never been planted.

The Cobden Club essay urges that excise duties should be levied in the colonies on domestic manufactures, equivalent to their customs duties on imports, forgetting that it is only a few years since that principle was adopted in this country; besides which the circumstances are totally different, since we levy customs duties on one or two articles only, which could be produced in this country, even in the form of substitutes, as beer for wine, &c., whereas the colonial duties are levied upon the entire variety of imported articles, rendering excise duties out of the question. Neither is direct taxation applicable to sparsely peopled countries like the colonies, such taxes would not in many districts repay the cost of collection; and surely they do well to avoid the income tax, with all its inherent injustice. Considering that the colonies import so large a proportion of what they consume, it is obvious that the necessary revenue can be most easily and fairly raised through the customs.

The objection as yet applies chiefly to Canada, and in a lesser degree to Australia, as these are the only colonies which have reached the stage where manufactures might commence, even if unprotected. In Canada the duties are 15 per cent., and in Australia they are chiefly 5 per cent., rising in some cases to 7 and 10 per cent. *ad valorem*. I apprehend the proper view to take of colonial tariffs is this: that so long as the colonies continue members of the empire, they are identified with the policy of free trade, so far at least as to avoid discriminating duties; but, if independent, no one can foresee what reciprocity treaties and restrictive tariffs they might adopt.

IX.—*In case of War.*

There is still one other aspect in which our colonies and possessions should be carefully regarded, but on which I must touch very briefly, viz., their value in case of war.

We take a just pride in the steady increase of our population. Notwithstanding that we have sent forth 7,000,000 of emigrants since 1815, our numbers have increased from 19,208,000 in 1815 to 31,048,397 in 1871.

But we must not overlook one result of this gratifying increase of strength, viz., that we can no longer raise sufficient food at home for our daily wants. Taking an average of three years, ending 1870, I find that we now require foreign supplies of the prime necessities of life, as cattle, sheep, meat, butter, cheese, corn, rice, eggs, fish, and potatoes, to the value of 58,500,000*l.* per annum; while to these may be added articles of secondary necessity, as sugar, tea, and coffee, to the value of 30,100,000*l.* per annum.

These articles of daily consumption are procured in exchange for our exports, and it is obvious that when war comes it is now simply

a matter of life and death to maintain our supremacy at sea. If our foreign and colonial commerce, with all its wide ramifications and numerous channels, cannot be efficiently protected at sea, what will be the result? Our supplies of food will fall off, and our export trade will be reduced, so that the necessaries of life will become scarce and dear at the very time when the means of earning a living will be lessened; we shall, in fact, be reduced to the condition of a besieged city.

Happily for us, the carrying trade is undergoing a great change by the substitution of steamers for sailing ships, partly owing to the Suez Canal, but more especially to recent improvements and the greater economy of fuel; this change is going on with astonishing rapidity; the proportion of tonnage built in 1871, and on the stocks being built on 31st December last, was 611,700 tons, steamers, to 107,000 tons, sailing vessels; so that in a few years the great bulk of our trade will be carried in steamers, which, in case of war, would diminish the risk of capture; while with our great wealth and unequalled facilities, our fleet of steam men-of-war ought to give us more than ever the undisputed command of the sea.

But supplies of coal for our mercantile and Royal Navy have become a matter of absolute necessity, as well as ports in which iron vessels can be docked; without which their efficiency would be much impaired; for this purpose, and as fortified depôts of coal, our naval and military stations have now become of vital importance. Instead of scrutinising in a niggardly spirit the cost of maintaining such places as Gibraltar, Malta, and Aden, Bermuda, Hong Kong, Simon's Bay, St. Helena, &c., we ought, if possible, to render them still more secure, and construct graving docks capable of receiving our largest iron-clads.

The cost must be viewed as an insurance, just as the cost of the army and navy can be justified by the necessity of self-respect and self-preservation. Nay, even with regard to our colonies proper and tropical settlements, we must consider what the difference would be in a struggle for existence, between our having British ports scattered all over the world, compared with those ports being even neutral, in which our enemies, equally with ourselves, could coal and refit, and must further remember that Nova Scotia, Australia, New Zealand, and Labuan can furnish our steamers with coal.

Considered in this light, the value of our colonial dependencies cannot be estimated in money, but their possession is assuredly not a mere question of prestige.

X.—*Arguments of Sentiment.*

I will not enter upon the arguments of sentiment for upholding our colonial empire, though the anti-colonial party have been

especially sarcastic on this subject. I may remark, however, that those who would govern mankind without regard to sentiment have invariably come most signally to grief. The “retrenchers” are, moreover, much given to quote the example of the United States; but I do not find that the Americans grudge the cost of a few regiments to overawe the Indians in the West, nor is there any hesitation in putting them down when they rise against the settlers. Nay, more, did not the Americans in the North, much as they respected the veteran General Scott, disregard his advice to let the “erring sisters go in peace”?—in the great Civil War did they not resolve, at any cost and at all hazards, to maintain the union intact? and who can say that, in yielding to their sentiment of patriotism, they have not been justified by the result?

XI.—*Conclusion.*

To my mind, there is nothing more hopeful, in our present situation, than the sentiment of loyalty and affection for the old country which happily pervades our colonies. It is beyond my province to enter upon a discussion as to how our mutual relations can be deepened and strengthened; but I may be excused for remarking that it can only be on a footing of perfect equality; and that the present time, when by means of the telegraph we shall shortly be brought, as it were, into contact with our fellow-countrymen at the antipodes, is surely not the occasion on which to look upon separation as inevitable.

Let us imagine, for a moment, how two centuries hence our dealings with this momentous question will be regarded. Will it be recorded how a great opportunity was lost?—how our public men were engrossed by party strife, and our Parliament absorbed in local bills and temporary concerns—until a crisis coming upon us, unexpected and unprepared, our empire suddenly broke up and drifted away in fragments?

Or, shall the record be that our statesmen, ere it was too late, aroused them to the task?—how they were seconded by an awakened Parliament, and encouraged by the people at home as well as by the patriotism of the colonists; and how, feeling the advantage of mutual support, the ties that bound them to the old country were drawn closer, as the colonies waxed stronger—until the whole became welded into one homogeneous empire, such as the world had not yet seen? An empire inhabited by a people scrupulous in respecting the rights of others, yet resolute to maintain their own; with no ambition to encroach on the territory of their neighbours, but whose glory it was to subdue the wilderness; and who, by their achievements in science, their devotion to peace, and their love of liberty, of justice, and of truth, marked an epoch in the history of mankind.

APPENDIX.

TABLE A.—*Quinquennial Averages of Exports of British Produce to the undermentioned British Possessions and Foreign Countries.*

[000's omitted.]

	1840-44.	1845-49.		1850-54.		1855-59.	
	Yearly Average.	Yearly Average.	Increase per Cent.	Yearly Average.	Increase per Cent.	Yearly Average.	Increase per Cent.
	£	£		£		£	
North American colonies	2,585,	2,872,	11	4,200,	46	3,622,	14 decr.
Australia and New Zea- land	1,246,	1,566,	26	7,215,	361	9,903,	37
Cape and Natal	419,	597,	42	949,	59	1,527,	61
West Indies	2,536,	2,027,	20 decr.	1,962,	3 decr.	2,089,	7
Mauritius	285,	256,	10 „	320,	25	511,	60
Ceylon	184,	204,	11	254,	25	483,	90
Straits Settlements	578,	465,	20 decr.	584,	26	965,	65
Total	7,833,	7,987,	2	15,484,	94	19,100,	23
United States	5,772,	9,297,	61	18,178,	96	19,053,	5
France	2,733,	2,207,	19 decr.	2,594,	13	5,655,	118
Spain and Portugal	1,548,	1,778,	15	2,413,	36	3,292,	36
Germany and Austria	6,732,	7,001,	4	8,569,	22	12,801,	50
Italy	2,181,	2,312,	6	2,698,	12	3,444,	28
Russia	1,824,	1,843,	1	1,025,	44 decr.	2,365,	131
Holland	3,459,	3,271,	5 decr.	4,044,	24	5,504,	36
Belgium	1,100,	1,196,	9	1,195,	—	1,684,	41
Brazil	2,298,	2,465,	7	3,111,	26	4,122,	33
China and Hongkong	1,224,	1,735,	42	1,798,	4	2,656,	48
Total	28,871,	33,105,	15	45,625,	38	60,576,	33

	1860-64.		1865-69.		1870.	1871.
	Yearly Average.	Increase per Cent.	Yearly Average.	Increase per Cent.		
	£		£		£	£
North American colonies	5,266,	45	7,480,	42	6,801,	8,296,
Australia and New Zea- land	11,341,	15	12,417,	9	9,902,	10,035,
Cape and Natal	1,953,	28	1,631,	16 decr.	1,867,	2,198,
West Indies	3,150,	51	2,569,	18 „	3,362,	2,940,
Mauritius	556,	9	462,	17 „	483,	503,
Ceylon	727,	50	833,	15	907,	928,
Straits Settlements	1,287,	33	1,754,	36	2,332,	1,935,
Total	24,280,	27	27,146,	12	25,654,	26,835,
United States	14,521,	24 decr.	21,522,	48	28,335,	34,229,
France	8,046,	42	10,995,	37	11,645,	18,061,
Spain and Portugal	5,028,	53	4,175,	17 decr.	4,615,	4,867,
Germany and Austria	14,379,	12	20,858,	45	22,034,	28,938,
Italy	5,400,	57	5,473,	1	5,267,	6,254,
Russia	2,786,	18	4,147,	49	6,993,	6,554,
Holland	6,363,	16	9,543,	50	11,222,	14,122,
Belgium	1,955,	16	3,153,	61	4,476,	6,287,
Brazil	4,592,	11	6,178,	35	5,353,	6,311,
China and Hongkong	4,380,	65	7,514,	71	9,545,	9,404,
Total	67,450,	11	93,558,	39	109,485,	135,027,

TABLE B.—Consumption of British Produce per Head of Population, in the undermentioned Colonies and Foreign Countries.

	Year of Census.	Population.	Imports of British Produce, Average of 3 Years.	Per Head.		
			£	£	s.	d.
North American Colonies....	1850	2,471,137	3,110,000	1	5	2
	'61	3,294,056	3,803,000	1	3	1
	'68	4,119,686	5,289,000	1	5	8
Australia and New Zealand	1850	546,184	2,496,000	4	11	5
	'61	1,266,432	10,781,000	8	10	3
	'69	1,847,789	11,801,000	6	7	8
Cape and Natal—						
Total Population	1865	759,261	1,761,000	2	6	4
White „		204,546	1,761,000	8	12	2
West Indies	1850	921,925	2,017,000	2	3	9
	'61	1,082,223	2,629,000	2	8	7
Mauritius	1850	180,863	275,000	1	10	5
	'61	310,050	536,000	1	14	7
	'69	322,924	416,000	1	5	9
United States	1850	23,191,876	13,742,000	—	12	—
	'60	31,443,321	17,761,000	—	11	4
	'70	38,555,983	24,798,000	—	12	10
France.....	1851	35,783,170	2,387,000	—	1	4
	'61	37,386,161	7,785,000	—	4	2
	'66	38,067,094	11,491,000	—	6	—
Spain	1860	16,301,851	2,445,000	—	2	1
Portugal	1865	3,987,867	2,053,000	—	10	4
Germany (Prussia, Ham- burg, Austria)	1867	59,250,280	20,566,000	—	6	11
Italy	1861	24,273,776	5,133,000	—	4	3
	'68	25,527,915	5,353,000	—	4	2
Russia	1858	73,920,000	3,410,000	—	—	11
	'63	77,008,448	2,537,000	—	—	7
Holland*.....	1868	3,628,467	10,193,000	2	16	2
Belgium	1856	4,529,560	1,708,000	—	7	6
	'66	4,839,094	2,871,000	—	11	10
Brazil	1856	7,677,800	4,313,000	—	11	2
	'64	10,045,000	5,289,000	—	10	6

* Some proportion of this belongs to Germany for goods in transit.

Note.—The imports are taken at an average of three years, viz., the year of census with the year before and the year after.

TABLE C.—*Proportion which British Produce bears to the Total Imports into the undermentioned Colonies and Foreign Countries. Taken from Colonial and Foreign Returns.*

	Gross Total of Imports for 1864-66, <i>ex</i> Bullion and Specie.	Gross Imports of British Produce for 1864-66.	Percentage of British Produce.
	£	£	
North American colonies	45,563,000	19,309,000	42
Australia and New Zealand ...	98,889,000	46,705,000	47
Cape and Natal	7,710,000	5,283,000	69
West Indies	15,807,000	6,805,000	43
Mauritius	6,200,000	1,870,000	30
Ceylon.....	10,571,000	3,815,000	36
Singapore and Straits	25,577,000	5,315,000	21
United States	195,760,000	64,543,000	31
France.....	431,198,000	38,221,000	9
Spain	45,445,000	8,037,000	18
Italy	121,356,000	20,764,000	17
Russia	86,204,000	14,293,000	17
Holland*.....	121,439,000	11,840,000	10
Belgium	162,029,000	12,250,000	8

* A proportion due to Germany for goods in transit.

TABLE D.—*Tonnage Employed in the Trade of the following Colonies and Foreign States, with the Proportion of British Tonnage. Total Tonnage Entered and Cleared.*

	Three Years taken for Average.	Annual Average of Total Tonnage.	Annual Average of British Tonnage.	Percentage of British Tons.	Tons or Lasts.
North American colo- nies	1865-66-68	6,213,049	4,995,107	80	Tons
Australia and New Zealand	1866-68	4,318,097	3,992,239	93	"
Cape and Natal	'66-68	552,918	468,469	85	"
West Indies and Guiana	'66-68	1,768,753	1,051,030	60	"
Mauritius	'66-68	528,189	389,985	74	"
Ceylon	'66-68	1,208,568	1,053,082	87	"
Straits Settlements and Singapore	'66-68	1,496,542	873,434	58	"
United States	1866-68	15,862,597	7,434,059	47	Tons
France	'66-68	12,796,694	4,643,792	36	"
Hanse Towns (Ham- burg, Bremen, Lu- beck)	1865-67	5,634,568	2,047,568	36	"
Italy	1868	7,269,501	1,656,906	23	"
Russia	1866-67	2,852,245	866,935	34	Lasts
Holland.....	'66-67	4,012,246	1,957,901	49	Tons
Belgium.....	'66-68	2,478,962	1,366,414	55	"

TABLE E.—*Abstract of the Cost of the undermentioned Colonies and Settlements at the Expense of the British Exchequer, from the Year 1853 to 1871.*

Years.	North American Colonies.	Australia and New Zealand.	Cape and Natal.	West Indies.	Mauritius.	Ceylon.	Singapore and Straits.	Total.
	£	£	£	£	£	£	£	£
1853	516,190	559,485	602,227	593,710	130,740	146,825	—	2,549,177
'54	315,956	572,262	608,499	503,109	126,076	115,170	—	2,241,072
1855	260,577	473,809	629,809	514,377	130,627	117,320	—	2,126,519
'56	559,522	442,580	1,106,970	467,014	154,983	125,498	—	2,856,567
'57	422,343	423,465	682,015	551,737	74,881	119,279	—	2,273,720
'58	359,675	330,993	527,750	385,102	65,734	80,176	—	1,749,430
'59	392,036	316,415	435,828	399,709	98,062	61,872	—	1,703,922
1860	368,926	550,429	513,376	391,846	148,875	83,686	—	2,057,138
'61	998,271	649,121	459,738	383,979	140,426	67,830	—	2,699,365
'62	1,012,393	586,861	387,141	393,452	133,610	71,035	—	2,584,492
'63	859,862	1,108,255	420,206	366,649	137,545	122,876	—	3,015,393
'64	852,002	1,377,956	328,513	362,071	135,029	84,577	28	3,140,176
'65	881,313	1,171,881	366,056	333,310	119,995	25,350	—	2,897,905
1866	1,193,589	633,311	347,867	385,532	119,279	22,808	1,120	2,703,506
'67	1,270,982	359,102	377,324	359,397	122,149	35,845	12,386	2,537,185
'68	1,093,300	290,914	286,245	350,929	73,546	23,450	36,781	2,155,165
	11,356,937	9,846,839	8,079,564	6,741,923	1,911,557	1,303,597	50,215	39,290,732
1869*.... } estimate }	1,093,300	290,914	286,245	350,929	73,546	23,450	36,781	2,155,165
1870*.... } estimate }	434,968	290,914	165,033	294,747	73,546	23,450	36,781	1,319,439
1871*.... } estimate }	221,975	229,714	168,257	291,489	73,546	23,450	36,781	1,045,212
Total....	13,107,180	10,658,381	8,699,099	7,679,088	2,132,195	1,373,947	160,658	43,810,548

* 1869 taken same as 1868. 1870 and 1871 same general expenses as 1868, but allowance made for difference in the military estimates for those years.

THE AREA OF GREAT BRITAIN AND HER COLONIES AND DEPENDENCIES

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MISCELLANEA.

CONTENTS :

	PAGE		PAGE
I.—General results of the Commercial and Financial History of 1871	127	III.—Recruits and Deserters	149
II.—The Book Publishing Trade in Great Britain in 1871	147	IV.—The County Courts	149
		V.—Shipbuilding in the United Kingdom.....	149

I.—*General Results of the Commercial and Financial History of 1871.*

FROM the *Economist* of 16th March, 1872 :—

This is the ninth of the series which has appeared in that paper. (See *Journal*, vol. xxxiv, pp. 57—68.) As in former years, we can only insert the general introduction given by the *Economist*, referring to the paper itself for the comprehensive appendices and details which are there collected :—

“In January (1871) the Franco-German war had been practically six months in operation, and the situation of Paris, surrounded since September by the German armies, had become manifestly critical. The bombardment commenced on the 8th of January, and the city capitulated on the 28th, after a siege of four months and a half. The definite treaty was signed at Bordeaux on the 1st March, and stipulated for the cession to Germany of Alsace and Lorraine, including Metz, and the payment of an indemnity of 220 millions sterling, in the proportion of 40 millions in 1871, 80 millions in 1872, and 100 millions in 1873. The title of Emperor of Germany had been voted to King William on the 10th December, and the practical unity of the Teutonic states under Prussian control accomplished. The reign of the ‘Commune’ prevailed in Paris from the middle of March to the end of May, and the Executive Government, under the presidency of Thiers, has remained at Versailles to the present time, scheming and intriguing for and against future dynasties and republics. The French loan of 80 millions sterling, in Five per Cent. Rentes at $82\frac{1}{2}$, payable in sixteen instalments, was offered on the 27th June, and in France was subscribed for two or three times over in the course of a few days. In London the loan was entrusted to Barings and Rothschilds.

“In July the Italian Government took possession of Rome as the secular capital of the country, and the power of the Pope as a territorial prince visibly passed away. The difficulties of Italy are now chiefly financial, and until the Chamber of Representatives learns more of the first rules of fair dealing with the public creditor than it possesses at present, those difficulties are not likely to grow

less. Austria and Hungary have been in hot contest with the Bohemians and other allied races of the Austrian Crown, but a series of ministerial and constitutional crises has not retarded the rapid material progress of all the Danubian countries. Spain has gone from bad to worse—assassinating General Prim, who, for a Spanish politician, was respectable; setting up and pulling down cabinets; contriving to raise a loan, and then grossly violating the conditions of paying the interest; and ending the year with political prospects which are gloomy even for such a country. In the meantime, the wonderful mineral treasures of the Peninsula are becoming known and developed by English enterprise and capital, and nothing is wanted to a career of rapid improvement but those common qualities of industry, order, and honesty which seem to be as utterly lost to Spain as its former grandeur and possessions.

“The treaty between this country and the United States, intended to settle the Alabama disputes, was signed at Washington on the 8th May, and the ‘cases’ to be submitted respectively to the five arbitrators to meet at Geneva were ready by the end of the year. By and bye it was discovered with amazement in this country that the American case claimed some untold sums of hundreds of millions sterling for indirect damages growing out of the acts of the Alabama and similar vessels. How any such claim ever came to be officially put forward is at present unknown; but, at all events, there is no uncertainty regarding the indignant and emphatic repudiation by this country of willingness to listen for a moment to pretensions so absurd and monstrous. The Treaty may perhaps fail by reason of this radical misunderstanding, and with its failure will, it may be hoped, pass away a good deal of the modern reliance on sentimental diplomacy between nations, especially between England and America. We desire to live in peace and amity with that country, but a rough and fluctuating democracy is only rendered more arrogant by endless concession. The true mode of going to the root of the ever-recurring differences with the United States is to come to a thorough and business-like understanding with Canada. The chain of colonies across the continent from Nova Scotia to British Columbia are now joined in one confederation; the Hudson’s Bay region is included in that arrangement, and we have wisely withdrawn all Imperial troops from every part except Halifax, and handed over forts and military stores to the Dominion Government. As the only connection of England with Canada now consists in the appointment of the Governor-General, the time has obviously come for reconsidering the whole case. Canada has now $4\frac{1}{2}$ millions of people, and is abundantly able to assume nominal, as it has long had practical independence. There is no longer identity of interest between the Canadians and ourselves. There is no real motive on either side for making large sacrifices, and it is the business of statesmanship to take note of these new facts, and give effect to them.

“The fearful terms exacted by Germany from France must within a few years render certain the recommencement of the war. Germany was entitled to a military frontier along the Vosges to Strasburg, to the dismantling of Metz, and to such a reasonable indemnity as could have been paid within a short period; but the

appropriation of Alsace and Lorraine, the prolonged occupation of several French provinces, and the exaction of a tribute which, by its magnitude, must be spread over three or four years, are political errors of the most fatal kind. With a population of more than 36 millions, and a military genius beyond that of any nation, France must of a necessity be a power of the first class; and Germany has now deliberately committed itself to a policy of defiance and hatred against France which will fill the next century with a succession of great wars. The defeat of France would, under any circumstance, have left enough of enmity and mischief between the two countries;* but the accumulated humiliations of last year, the seized provinces, the prolonged military occupation, and the crushing tribute, have driven every inhabitant of the country to identify self-preservation with vengeance. It is a great error to suppose that France has been exhausted by the war. There is still immense wealth in that country. During the twenty years of the Empire the increase of national resources all over France was almost fabulous. For several years before July, 1870, Paris had become a chief financial centre of Europe, and principally because there was a French public who had ample means of providing vast capital for certain descriptions of enterprise.† In the course of 1871 we have seen the avidity with

* “The *Pall Mall Gazette* gives the following statement regarding the loss of life in Paris during the troubles of 1870:—‘The French journals give us some interesting statistics as to the effects of the war on the population of the capital. These statistics are only approximative, for as many of the official registers of deaths were destroyed in the conflagration at the Hotel de Ville and the mairies, they are mainly based on the books of the administration of Pompes Funebres. The Pompes Funebres of course keep no record of citizen soldiers killed in the field, or of the victims of the Commune, and the Versailles who were buried wholesale in the square of St. Jacques, the Park of Monceau, and the quarries of America. Allowances made, however, the following conclusions may be accepted as sufficiently accurate for all practical purposes:—The average number of deaths in Paris is 45,000. The numbers actually registered in 1870 were 73,581, while in 1871 they amounted to the startling total of 99,945—in other words, to twice the ordinary death-rate. Startling as that total is, starvation, confinement, and anxiety are sufficient to explain it. But, what is more surprising, and even more eloquent of the fatal effects of privation and discouragement, is the fact that in the same period the average births had diminished by about four-fifths, while in one month, that of September last, they had fallen from 4,500 to 1,729. In short, roughly speaking, the deaths at one time had doubled while the births had diminished by half.’

† “The following statement describes the final catastrophe of the *Credit Immobiliere Company*, of Paris, the twin creation with the *Credit Mobilier* of the audacity and genius of the Perrieres in 1853-54:—‘The affairs of the *Credit Immobiliere* have just entered into a new phase, which will probably be the first step to a general dissolution of the company. Although for a long time past in a state of hopeless insolvency, its directors had still retained the management of the property forming its assets, with the forlorn hope that the construction of a new branch and depôt of the Lyons and Mediterranean line might enhance the value of its lands at Marseilles, which compose the greater portion of its assets, and would extricate the company from its difficulties. The rival claims of another land company at Marseilles, which comprises among its directors several of those of the railway company itself, and which demands a different trace for the new line, are said to prevail with the railway board, and consequently extinguish the hope of the *Immobiliere*. The chief privileged creditor of the *Immobiliere* is the *Credit*

which the National Loan of 80 millions sterling was taken two or three times over within a month after the defeat of the Commune, and the loans raised by the City of Paris, and by several large municipalities, have all been covered in the same way. The mercantile debts also due to foreigners in France before the war have been paid since its cessation with surprising readiness. The mass of the French population is the most parsimonious and saving in Europe. The terrible pressure of the new taxes will be met by personal sacrifices incredible to an Englishman, and, if the seasons be favourable for a few years, Europe will find France again able to assert its claims to paramount attention. In the meantime its utter collapse has led to the transfer to this country of no small part of the trade and financial enterprise it possessed before the war. There are four leading financial causes for this change—first, the establishment of a depreciated paper currency in consequence of the suspension of cash payments at the Bank of France, and the consequent impossibility of founding large and distant operations upon a monetary basis highly artificial and fluctuating; second, the pressure of new and onerous taxes on commodities and transactions; third, the painful uncertainty which surrounds every part of the future government of the country; and, lastly, the absolute assurance that within a few years there must be a renewed war with Germany of a character far more deadly and prolonged than the last. To some extent the last cause operates, in the case of Germany, in diverting enterprise to this country; for it would be a great error to suppose that the stress of the Prussian military system, in its severe enforcement of personal service, without regard to wealth or occupation, has not profoundly broken up the industrial life of the country. At the same time no occurrences could more signally display the vast dimensions and force of the resources of modern Europe than the rapid way in which nearly half a million of combatants were put into the field, and were brought into decisive conflict, with results to the vanquished, both national and financial, exceeding any example. The mere finance of the payment within a year of the peace of about 80 millions sterling of the ransom, indicates a vastness in the range of commerce and business entirely new in the experience of the world. The 80 millions have had to be found by the past, present, and future accumulations, produce, and industry of France, but the

Foncier Company, which has hitherto received in payment of its annuities the rents from the property of the former. The difficulties arising from the war and the insurrection had caused some of these payments to fall in arrear, and the *Credit Foncier* has now obtained a judge's order sequestrating the entire property of the other company. The assets of the *Immobiliere* are set down in the last balance-sheet issued at about 300 millions, of which 260 consist of its property in Paris and at Marseilles. The real value of the property is, however, estimated in the last report of the *Credit Mobiliere*, which is a creditor for over 100 millions, at only 153,420,000 frs., on which mortgages are held by the *Credit Foncier* and other creditors to the amount of 95,199,000 frs., leaving only 58,221,000 frs. to meet the claim of the *Credit Mobiliere*, with 39 millions due to the bondholders; the capital of 80 millions may be considered as irretrievably lost. An official assignee has been appointed, pending judgment on a demand made by the *Credit Foncier* for the winding up of the defaulting company.—*Paris Correspondent of Economist*, February, 1872.

commerce and credit of the community of European States has been able to effect the transfer without, so far, any special embarrassment.*

II.

“Quoting the authorities given at length in the usual place it may be said of the harvest of 1871 that in this country the wheat crop was under an average, but not so much so as the very bad weather which prevailed into June would have led us to fear. Barley is the best crop of the season, and oats were fully an average. Nearly all root crops, except potatoes, were favourable.

“The following is the usual table:—

(I).—*Gazette Average Prices of Wheat (per Imperial Quarter) in United Kingdom, immediately after Harvest, 1863-71, and Total Average of Calendar Year.*

After Harvest.			Yearly Average.		
	s.	d.		s.	d.
1871	56	3	1871. Whole Year	56	8
'70	48	6	'70. "	46	11
'69	46	2	'69. "	48	2
'68	53	6	'68. "	63	9
'67	70	8	'67. "	64	6
1866	52	6	1866. "	49	11
'65	42	4	'65. "	41	10
'64	38	6	'64. "	40	2
'63	40	—	'63. "	44	9

“The demand for grain for France raised the markets during a great part of 1871, and the average of the year is as high as 56s. 8d., or 22 per cent. higher than 1870 and 1869, and within 10 per cent. of the dear years, 1868 and 1867. It is impossible not to revert to the four cheap years, 1863-66, when the average for the whole group was (say) 44s., or nearly 30 per cent. lower than last year. 30 per cent. cheaper bread among the 20 millions of persons in these islands dependent on wages means one shilling out of every three rendered available for other purposes of expenditure or saving, and it is the multitude of these extra weekly shillings which gives the extra impetus to all other industries.

* It is announced on 1st March (1872), that France has arranged to anticipate the payment to Germany of the last instalments of the half milliard (20 millions sterling) now in course of payment to May next. France will thus have paid—

	£
Five half-milliards	80,000,000
Interest	6,500,000
	<hr/>
	86,500,000
Less Alsace railways	13,000,000
	<hr/>
	73,500,000
	<hr/>

“As regards the crop of 1871, Mr. James Sanderson (*passim*) estimates the ‘yield of wheat at 22 bushels per acre, or 8 bushels under an average, or, as compared with recent years, 8 bushels per acre under the yield of 1870, 2 bushels under the crop of 1869, 14 bushels short of the great crop of 1868, and about equal to the crop of 1867; or, to take the aggregate yield, and assuming that the area under wheat will be equal to that of 1870, the results are as follows:—In 1868 the yield was $16\frac{1}{2}$ millions of quarters, in 1869 it was 12 millions, in 1870 it was 13 millions, and in 1871 it was only $9\frac{1}{2}$.’

“The destruction by fire in October last of nearly the whole of the famous grain city of Chicago produced hardly any effect on the markets here. The rapid extension of cultivation and railways in the boundless western regions, of which Chicago is the natural outlet, and the St. Lawrence, the shortest and cheapest channel, will lead to marked results during the next few years. The natural ports of this growing western production and industry are not New York and Boston, but Montreal and Halifax. The voyage to Halifax is two days less than to New York, and avoids a most dangerous navigation, especially in the winter; and in summer vessels of the largest class can ascend the St. Lawrence to Montreal, and so bring themselves many hundred miles nearer the producer than if they went to New York. The clear and obvious allies of the Canadians are not the people of this country, but the farmers and settlers of all the states west of Lake Erie, and in like manner the inhabitants of these regions have scarcely any interest in common with the New England States or with the valley of the Mississippi. They are raisers of raw produce for the European market, and consumers of manufactured goods, which it is their clear advantage to obtain burdened with as few duties as possible.

III.

“We give our usual table of the movement of gold and silver to the East. There has been some revival in 1871 of these exports, and the total reaches $6\frac{1}{4}$ millions against $4\frac{1}{3}$ millions in 1870. The opening of the Mont Cenis Tunnel in September last, and the definite adoption of Brindisi as the mail route to India by the service of the Peninsular and Oriental Company has, of course, cut down the transit of treasure by the French steamers from Marseilles. The higher price of cotton in 1872 will lead to augmented remittances to India. We print in Appendix statements relative to the extension and success of quartz gold mining both in Australia and California, which seem to indicate a higher annual production of gold in future years. No fact can be more welcome, as we have repeatedly affirmed the danger in these modern times is not that the world will furnish every year too much but too little gold and silver. To the long list of countries afflicted with inconvertible paper currencies—United States, South America, Russia, Austria, Italy, Turkey, and Spain—must now be added France. It is probable that not less than 1,000 millions sterling represents the amount of these paper currencies, descending, as most of them do, to fractional sums of a few pence; and the time must be contem-

plated when the development of the resources of the several countries and the establishment of a sounder national finance will enable them gradually to replace the largest part of their inconvertible paper with gold and silver coin. The entire production of new gold in Australia and California since 1848-52 is certainly much less than the 1,000 millions sterling just mentioned, and for the next twenty years it is very improbable that the new supplies from the same countries will be on the same scale. Discoveries of gold may, of course, be made in other regions.

"But besides the absorption of gold and silver which will arise by the withdrawal of compulsory paper, there will be the effect of the substitution of a gold for a silver standard in many countries where hitherto the latter metal has been the sole or conjoint legal coin. By the important law of November last the German Empire has already made this change, and the recoinage of the whole of the German metallic money is now in rapid progress. Some competent observers look forward to a sensible decline in the market value of silver as a consequence of the liberation of so large a mass of German silver pieces. Holland also is said to be returning to the gold standard, which was somewhat hastily discarded in the early days of the gold discoveries, fearing, quite prematurely, as the event has shown, a depreciation of gold. —

"The following is the table :—

(II).—*Export of Gold and Silver to Egypt and East, per Peninsular and Oriental and French Steamers, 1861-71.*

[0,000's omitted, thus 3,28 = 3,280,000.]

Year.	Gold.	Silver.	Totals.
	Mln. £	Mln. £	Mln. £
1871	3,28	3,89	6,17
'70	2,08	2,23	4,31
'69	2,62	6,44	9,06
'68	6,52	3,56	10,08
'67	1,65	2,05	3,70
'66	2,87	7,07	9,95
1865	4,35	9,74	14,09
'64	6,97	16,96	23,92
'63	8,02	15,13	23,16
'62	3,40	14,60	18,00
'61	1,43	8,86	10,28
Totals, eleven years, 1861-71	43,19	90,53	133,72
Average " 	4,00	8,80	12,80
Totals, ten years, 1851-60.....	11,10	90,00	101,00
Average " 	1,10	9,00	10,10
Totals, twenty-one years, 1851-71	45,09	180,53	234,72
Average " 	2,05	8,50	10,55

IV.

"Writing of the Cotton Trade, the circular of Messrs. Ellison, quoted *passim*, commences by saying 'that 1871 has been one of the most prosperous periods in the history of British commerce and manufactures. Every branch of industry has experienced a most extraordinary expansion, and the condition of the working classes has been one of unexampled comfort and prosperity. As regards the cotton industry, 1871 has far surpassed even the profitable period immediately preceding the American War; and 1860 will henceforth cease to be quoted as the *annus mirabilis* of the trade. The position of producers is not so good at the close as it was at the opening of the year, but, taking the year round, the result has been most satisfactory. Importers also have, on the whole, been doing very well, owing to the upward course of values.'

"The following Table (III) exhibits the leading results of 1871 and preceding years:—

(III).—*United Kingdom, 1857-71. Estimated Value of Raw Cotton Imported, Re-Exported, and Consumed.* (Ellison's Circular.)

[00,000's omitted, thus 55,9 = 55,900,000/. The bales are given without abbreviation.]

Years.	Import.		Exported.	Consumed, United Kingdom.		
	Value.	Price.	Value.	Value.	Total Weight.	Bales per Week, 400 lbs. each.
	Mln. £	Per lb. d.	Mln. £	Mln. £	Mln. lbs.	Bales.
1871.....	55,9	8	9,8	40,8	1,205,	57,950
'70.....	51,0	9 ⁵ / ₁₆	8,2	42,1	1,071,	51,520
'69.....	55,2	11 ¹ / ₁₆	11,3	43,8	940,	45,140
1868.....	52,0	9 ⁵ / ₈	11,6	41,0	996,	47,890
'67.....	53,8	10 ¹ / ₈	14,0	41,2	954,	45,890
'66.....	75,8	13 ¹ / ₂	19,5	51,9	800,	42,829
1865.....	63,2	15 ³ / ₄	17,1	47,2	718,	34,550
'64.....	82,2	22	22,1	52,4	561,	26,980
'63.....	58,0	20 ¹ / ₈	21,6	40,7	476,	22,910
1862.....	31,1	14	12,4	24,7	449,	21,620
'61.....	38,7	7 ³ / ₈	7,9	32,2	1,005,	49,800
'60.....	36,6	6 ³ / ₈	5,5	28,9	1,079,	51,890
1859.....	32,2	6 ¹ / ₂	4,1	27,6	977,	47,000
'58.....	27,2	6 ⁵ / ₈	3,3	24,8	907,	} Not given
'57.....	28,6	7 ¹ / ₈	3,5	24,8	825,	

"The average *import price* has been 8*d.* against 9¹/₃*d.* in 1870, and it is probable that in the present year (1872), and perhaps in 1873, we may not see so low a figure of import cost. The quantity wrought up in the United Kingdom is far in excess of 1860 or any previous year, and has reached 58,000 bales per week. It is very hard to form precise conceptions of the manifold effects arising from the manipulation between the producer of the raw cotton and the home and foreign consumer of the cotton cloth, of quantities and volumes so enormous. More ships, more railway waggons and locomotives,

more machines, and more people are all set in motion by these expanded quantities; and we are able to understand the cause more plainly by remembering what was the collapse and stagnation of the years 1862-65, when the quantities consumed were less than half the figures of 1871, and the price was nearly threefold.

“The increase in the home consumption has been very great in 1871, as appears by the following Table (IV):—

(IV).—*Cotton Cloth and Yarn, Exported and Consumed at Home, 1860-71. (Ellison's Circular.)*

[In 1,000,000 of lbs. weight.]

Years.	Exported.	Home Consumption.	Total.
	Mln. lbs.	Mln. lbs.	Mln. lbs.
1860.....	475	150	625
'62.....	412	102	514
'63.....	392	93	485
1864.....	403	110	513
'65.....	475	150	625
'66.....	625	145	770
1867.....	687	145	832
'68.....	723	160	883
'69.....	704	125	829
1870.....	802	140	942
'71.....	873	185	1,058

“The evidence of this Table is remarkable. During the famine years 1862-65 the foreign demand was steady, even when compared with the great pre-war year 1860. The home demand fell off much more. In 1871, however, the home demand has far exceeded that of any preceding year, and the command of the foreign market has been greater than ever.

“The next Table (V) shows the distribution of Cotton Piece Goods (apart from Yarn) in 1869-71:—

(V).—*Exports of Cotton Piece Goods, 1869-71, in Quantities (Millions of Yards) and Percentage of Totals. (Ellison's Circular.)*

Exported to	Quantities.			Per Cent. of Total Quantity.		
	1871.	1870.	1869.	1871.	1870.	1869.
	Mln. yds.	Mln. yds.	Mln. yds.	Per cent.	Per cent.	Per cent.
India and Egypt	1,291,	1,289,	916,	37·9	39·5	32·8
China	551,	500,	324,	16·2	15·3	11·6
Turkey and Levant	244,	290,	272,	7·2	8·9	9·8
United States	2,086,	2,079,	1,512,	61·3	63·7	54·2
	129,	105,	226,	3·8	3·2	8·2
	619,	588,	527,	18·1	18·0	19·0
Italy, Austria, &c.	2,834,	2,772,	2,365,	83·2	84·9	81·4
	186,	184,	198,	5·4	5·6	7·1
	107,	88,	102,	3·1	2·7	3·7
Germany.....	107,	88,	102,	3·1	2·7	3·7
Other Countries.....	280,	219,	215,	8·3	6·8	7·8
	3,410,	3,267,	2,776,	100·0	100·0	100·0

“The high price of raw cotton in 1869-70 stimulated production all over the world, and the American crop of 1870, aided by a most propitious season, nearly reached the high figure of $4\frac{1}{2}$ millions of bales. The estimate for 1872 is not more than $3\frac{1}{2}$ millions of bales, but the advance in price which has been established since the autumn of 1871 will greatly stimulate production.

“The following are the figures :—

(VI).—*American Cotton Crops, 1866-67 to 1870-71.* (Ellison's Circular.)

[In 1,000's of bales.]

Detail.	1871-72. Estimate.	1870-71.	1869-70.	1868-69.	1867-68.	1866-67.
Total crop	3,300	4,347	3,155	2,414	2,577	2,204
<i>Exported to—</i>						
Great Britain	2,350 {	2,343	1,475	990	1,229	1,216
France		138	346	225	198	198
Other places		649	358	233	230	130
<i>Consumed in—</i>						
Northern States } Southern „ }	— 1,000 {	3,130 1,082 91	2,179 838 90	1,448 839 153	1,657 819 146	1,544 723 128
	—	4,303	3,107	2,440	2,622	2,404
Stock at end of season	—	108	60	11	37	82

Note.—The *pre-war* cotton crops and consumption in the States and export to Great Britain were as follows :—

[In 1,000's of bales.]

Years.	Crop.	Consumed in United States.	Exported to Great Britain.	Price in Liverpool.
1856-57	2,990	702	1,428	d. $7\frac{1}{2}$
'57-58	3,113	470	1,810	$6\frac{5}{8}$
'58-59	3,850	770	2,050	6
'59-60	4,675	810	2,670	$6\frac{1}{2}$
'60-61	3,660	670	2,175	$7\frac{3}{4}$

“The sources of the supply of raw cotton are reverting in great measure to the order in which they stood before the war. America has wholly recovered its former predominance. The supply from India has been trebled, and Brazil, Egypt, and the West Indies together supply about as much as India, say 1 to $1\frac{1}{2}$ millions of bales.

(VII).—*Raw Cotton, 1868-72, and Year 1860. Sources of Supply into United Kingdom, Actual and Estimated.* (Ellison's Circular.)

[In 1,000's of bales, thus 2,350, = 2,350,000.]

From, and Average Weight of, Bales in Pounds in 1870.	1872. Estimate.	1871.	1870.	1869.	1868.	1860.
From lbs.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
America (438)	2,350,	2,249,	1,664,	1,040,	1,269,	2,583,
India (330)	1,500,	1,235,	1,064,	1,496,	1,452,	563,
Brazil (165)	800,	514,	403,	514,	637,	103,
Egypt, &c. (495)	500,	272,	220,	227,	202,	106,
West Indies (216)	240,	133,	112,	105,	100,	—
Total import.....	5,390,	4,405,	3,462,	3,382,	3,660,	3,366,
Stock, 1st January	1,330,	546,	460,	498,	555,	—
Total supply.....	6,720,	4,952,	3,922,	3,880,	4,215,	—
Less export	—	910,	658,	791,	915,	—
Less stock, 31st December	—	4,052,	3,264,	3,089,	3,300,	—
Consumption	—	927,	446,	460,	498,	—
Average consumption per } week in bales of 400 lbs. }	—	3,114,	2,797,	2,629,	2,802,	—
Ditto, ordinary bales	—	58,	51,	45,	47,	44,
	—	60,	54,	50,	54,	53,

V.

“The Iron, Engineering, Hardware, Cutlery, Shipbuilding, and nearly all other trades, are described in the circulars collected *passim* as being in a highly-prosperous condition. The revival began immediately after the end of the Franco-German War, and doubtless derived its first stimulus from the reopened demand from Germany, France, and the countries affected by the war. By midsummer the activity was greatly extended, and from that time to the close of the year there was a continuous ascent in prices of certain commodities (chiefly raw materials), in the demand for all sorts of labour, and in the quoted value of railways and other enterprises contributing to the business of production.

“The following short Table (VIII) will indicate the remarkable rise in certain kinds of leading raw material :—

(VIII).—*Rise of Wholesale Prices (London) in 1871.*

Articles.	7th January, 1871.	30th December, 1871.	Rise.
	£ s. d.	£ s. d.	Per cent.
Iron, best bar..... cwt.	7 2 6	8 17 6	24
Copper „	75 — —	95 — —	28
Tin „	137 — —	152 — —	12
Wool, English .....pack	13 — —	22 — —	70
Tallow cwt.	2 5 —	2 9 —	9
Cotton, raw lb.	— — 7¼	— — 8¾	20

“The rise in wages in 1871 in the generality of manufacturing trades—especially iron, engineering, coal, and hardware—is probably from 15 to 20 per cent., accompanied, in many cases, by reductions in the number of hours worked per week of 10 to 15 per cent.

“The intelligent circular by Mr. Muller (*passim*), on the Cleveland Iron Trade, gives the following figures as the comparison between 1861 and 1871:—

(IX).—*Wages. Iron Trade, North of England, Ten Years, 1861 and 1871.*

Class.	1861.	1871.	Rise.
			Per cent.
Labourers	3s. per day	3s. 6d. to 4s. per day	25
Moulders.....	24s. per week	28s. per week	17
Engine fitters.....	26s. „	28s. to 30s. per week	12
Puddlers {	(10 hours per day) 40s. per week	(9 hours per day) 55s. per week	} 35
Colliers (hewers) {	5s. 3d. per score of 7½ tons	7s. per score of 7½ tons	30

“During the ten years there have, of course, been fluctuations up and down, especially in 1864-65, when a large rise took place, and in 1867-68, when wages were much depressed. At Newcastle, in August and September, there was a formidable strike of engineers, ending in a victory by the men; and in other places there have been strikes less extensive in various industries, nearly always leading to large concessions by the employers. At the same time there has been an extensive resort to arbitration, and to boards and councils set up on the principle of impartial investigation of the rival claims of masters and men.

“The reports of the Factory Inspectors for 1871 afford abundant evidence of the general rise of wages. Mr. Baker, whose experience and knowledge all appreciate, reports that in Lancashire and Yorkshire considerable numbers of labourers have been imported from country districts. The commencing wages are 15s. and 16s. a-week for lads of about 17. In South Wales it is reported that the demand for labour is very keen, and the lowest class of unskilled labourers get 12s. to 14s. a-week, and after a little experience rise to 15s. to 20s. At Coventry the wages in the silk trade are 25 per cent. higher than early in 1870.

VI.

“The months of September and October (1871) will be remembered as the period of a sharp, sudden pressure on the London money market, which, coming with scarcely any warning, sent down the prices of securities and of many commodities to a serious

extent. The minimum bank rate stood at 2 per cent. from the 13th July to the 21st September, when it was at once raised to 3 per cent., was further raised to 4 per cent. on the 28th September, and to 5 per cent. on *Saturday*, the 7th October, at which point it remained till the 16th November, when it was reduced to 4 per cent., and again reduced to $3\frac{1}{2}$ per cent. on the 30th November. The rise in September was another of the many illustrations afforded since 1844 of the inelastic nature of our banking system in dealing with the peculiar conditions which recur almost every autumn, and are likely to recur in future years with greater intensity by reason of the growth of transactions and the larger scale on which they are carried on; and especially likely in the early part of the year to recur so long as Mr. Lowe's scheme prevails of collecting so disproportionate an amount of revenue that he will generally be a borrower of the Bank of England for the October dividends. The ordinary internal causes which contribute to impoverish the bullion reserve of the Bank of England in the months of September, October, and November are four, viz.:—(1) The extra demand for coin for the payment of harvest wages; (2) an extra demand for bank notes by travellers and tourists at home and abroad—a demand which increases every year; (3) the demand for gold coin which arises in Scotland and Ireland under those clauses of the Acts of 1844-45 which compel the Scotch and Irish banks to cover all excesses in their circulation beyond the statutory maximum by reserves of gold coin. The Scotch and Irish bank-note circulation regularly expands in the autumn of each year in consequence of corn, cattle, &c., being brought to market, and the same causes operate in England; (4) the concentration at Michaelmas of a great mass of periodical payments of rents, dues, salaries, interest, dividends, &c., all requiring more or less coin and bank notes. These four causes all operated last autumn, and they were intensified by three further and special circumstances, viz.:—(5) a marked rise in the wages of nearly all trades, and a considerably increased demand for gold and silver coin—a demand as regards *silver* coin which led to great inconvenience and pressure at the Mint; (6) the requirement by the Chancellor of the Exchequer of an advance of $2\frac{1}{2}$ millions to enable him to pay the public dividends due in the first week of October; and (7) lastly, the effect on the London market of the engagements of English subscriptions to the French Loan, and of English financial aid to France in effecting the payments due to Germany.

“The following Table (X) presents the figures of the Bank of England weekly returns in a condensed form:—

(X.)—*Bank of England, September—December, 1871, Abstract of Leading Items of the Weekly Returns.*

[Expressed in millions and tenths—thus 5.4 = 5,400,000.]

1	2	3 4		5	6	7	8	9	10	11
Minimum Rate.	Dates (Wednesday Evening).	Deposits.		Securities.			Bullion.			Circulation, including B. P. Bills.
		Public.	Private.	Public.	Private.	Total.	Banking Department.	Issue Department.	Total.	
Per cent.	1871.	Mlms.	Mlms.	Mlms.	Mlms.	Mlms.	Mlms.	Mlms.	Mlms.	Mlms.
2 (13 July)	6 Sept.	5.4	21.2	13.8	17.3	31.1	15.7	9.1	24.8	25.6
" "	13 "	5.9	20.1	14.0	16.9	30.1	14.4	9.7	24.2	25.3
3 (24 Sep.)	20 "	6.4	20.3	14.0	18.2	32.2	13.7	9.8	23.5	25.4
4 (28 ")	27 "	6.2	23.0	14.0	23.3	37.3	11.1	10.0	21.1	25.5
5 (7 Oct.)	4 Oct.	5.0	22.6	14.0	24.0	38.0	8.9	11.3	20.2	26.9
" "	11 "	4.4	22.2	16.3	20.9	37.2	8.0	11.1	19.2	26.7
" "	18 "	3.7	23.1	15.8	20.5	36.3	9.5	10.8	20.3	26.4
" "	25 "	4.1	24.0	15.2	20.0	35.1	11.6	10.1	21.6	25.6
" "	1 Nov.	4.6	23.3	15.0	19.5	34.5	12.0	10.5	22.5	26.0
" "	8 "	5.2	22.7	15.0	18.7	33.7	12.9	10.1	23.1	25.7
4 (16 Nov.)	15 "	5.6	22.9	15.0	18.0	33.0	14.1	9.8	22.9	25.3
" "	22 "	6.6	22.1	15.0	17.6	32.6	14.7	9.5	24.2	25.0
3½ (30 Nov.)	29 "	7.3	21.0	15.0	16.6	31.6	15.2	9.2	24.4	24.7
" "	6 Dec.	6.9	18.9	15.0	16.5	31.5	15.0	9.4	24.4	27.0
3 (14 Dec.)	13 "	7.8	20.6	15.0	16.3	31.3	15.6	9.0	24.6	24.4

"The crucial column here is col. 8, giving the bullion in the banking department. The loss of 2 millions out of $15\frac{3}{4}$ between the 16th and 20th September quite justified the 3 per cent. The loss of $2\frac{1}{2}$ millions more before 27th September still more justified 4 per cent., and the further loss of $2\frac{1}{4}$ millions in the next week brought 5 per cent., and partly justified the semi-panic feeling which began to arise, and to point to 6, 7, and even 8 per cent. as possible. In little over four weeks the banking reserve had fallen nearly one-half. It was quite true that the *total bullion* had fallen off only one-sixth—from $24\frac{3}{4}$ to $20\frac{1}{4}$ millions—but then the Act of 1844 placed beyond reach, except at a cost of a crisis, the 11 millions in the issue department. Mr. Lowe took $2\frac{1}{4}$ millions (col. 5) between the 4th and 11th October, and if the pressure had been a little more severe he might have had to place a new meaning upon his famous phrase, 'that the money market must take care of itself.' The party to take care of itself might have been the Treasury, for it is very unlikely that the London banks will again sacrifice securities in panic times instead of boldly drawing their cash balances from the banking department, and in that way removing the artificial barrier between the two reserves, by compelling the bank directors to provide means of answering the cheques of their own depositors.

"Of the course of the Scotch and Irish demand for gold under the Acts of 1844-45, the *Gazette* returns enable us to exhibit the precise particulars in the following abstract (XI) :—

(XI).—*Bank Note Circulation, August—December, 1871, of the Private and Joint Stock Banks of England and Wales, Scotland and Ireland, with the Amount of Gold Held by the Banks of the two Latter Countries as Cover for Increase of Circulation.*

1	2	3	4	5	6	7	8	9
Four Weeks Ended	England and Wales.			Scotch Banks.	Irish Banks.	Gold Held by		
	Private Banks.	Joint Stock Banks.	Total.			Scotch Banks.	Irish Banks.	Total.
1871.	Mlns.	Mlns.	Mlns.	Mlns.	Mlns.	Mlns.	Mlns.	Mlns.
12 Aug.	2.61	2.32	4.93	5.14	6.97	3.20	2.97	6.17
9 Sept.	2.58	2.30	4.88	5.15	7.00	3.21	3.03	6.24
7 Oct.	2.74	2.41	5.15	5.35	7.70	3.33	3.14	6.47
4 Nov.	2.89	2.48	5.37	5.19	8.46	3.49	3.56	7.05
2 Dec.	2.77	2.41	5.18	5.71	8.40	3.66	3.73	7.39
30 „	2.67	2.35	5.02	5.24	8.05	3.54	3.65	7.19

“We see here the same law of a periodical expansion of the country notes in the three divisions of the United Kingdom. The English country banks are not required to cover the excess of notes over the prescribed limit by holding gold; but in Scotland and Ireland, where that obligation prevails, we find (col. 9) that the withdrawals of gold coin from London were quite $1\frac{1}{4}$ million. The increase in the circulation of the Bank of England was another $1\frac{1}{4}$ million, so that for purely *internal*, periodical, wholesome purposes the temporary expansion was $2\frac{1}{2}$ millions—the whole of which is made to act by way of distinct impoverishment of the banking reserve, and tends, therefore, to tighten and disturb the money market; and herein consists one great vice of our present system, namely, that it admits of no elastic adjustment to meet perfectly harmless and temporary internal demands.

“But after the climax of 5 per cent. had been reached on the 7th October, there presently supervened a new and singular class of difficulties. The bank directors very wisely kept up their rate until their banking reserve was again raised to 14 millions, and, therefore, did not come down to 4 per cent. till 16th November. The rate in the open market on first-class bills fell to $4\frac{1}{2}$ by the 20th October, and to 4 and $3\frac{1}{2}$ not long after. In the meantime the London banks and discount brokers were allowing, in pursuance of the traditional rule, 1 per cent. to $\frac{3}{4}$ per cent. “under bank”—that is, 4 and $4\frac{1}{4}$ per cent.—on money left with them on deposit, and for several weeks they incurred very considerable losses in consequence of the impossibility of realising these rates on bills offering in the market—losses indeed so considerable as to impair the profits of the half-year of most of the joint stock banks, as appeared by the published accounts to 31st December (1871).

“The following Table (XII) gives the comparative rates:—

(XII).—*London Money Market, September—November, 1871. Comparison of Bank of England Minimum Rates with those of the Open Market, and with the Rates allowed by Banks and Discount Brokers on Deposits.*

Bank of England Minimum.	Dates. (Fridays.)	Open Market.		Allowed on Deposits by		
		Bank Bills, Three Months.	Trade Bills, Three Months.	London Banks. Seven Days.	Discount Brokers.	
					Call.	Seven Days
Per cent.	1871.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
3	Sept. 22.....	3	3½	2	2	2¼
4	" 29.....	4	4½	3	3	3¼
5	Oct. 6.....	5	5½	4	4	4¼
"	" 13.....	4¾	5	"	"	"
"	" 20.....	4½	4¾	"	"	"
"	" 27.....	3¾	4½	"	"	"
"	Nov. 3.....	3½	4	"	"	"
"	" 10.....	"	"	"	"	"
4	" 17.....	3¼	3¾	3	3	3¼
"	" 24.....	"	"	"	"	"
3½	Dec. 1.....	3⅛	3¼	2½	2½	2¾
"	" 8.....	"	"	"	"	"

"The obvious and sensible remedy is for the banks and discount brokers to abandon the practice of taking the Bank minimum as the regulating index of the rates to be given on deposits, and agreeing, by means of a committee or conference, among themselves what the allowances shall be from time to time. Their experience last autumn was so disagreeable, that it is probable that any recurrence of a similar state of things will lead to the adoption of the course described.

VII.

"In Table (XIII) we continue the record of the rates of interest prevailing in the capitals of Europe in 1871 and previous years. The general lowness of the rates continues to afford great assistance to every kind of industry. In Paris, of course, there has been irregularity.

(XIII).—*European Rates of Discount, 1867-71. Average Annual Rates per Cent. per Annum, at Places as under for First Class Bills, being a Summary of Appendix.*

Places.	1871.		1870.		1869.		1868.		1867	
	Prin- cipal Bank.	Open Market.	Prin- cipal Bank.	Open Market.	Prin- cipal Bank.	Open Market.	Prin- cipal Bank.	Open Market.	Prin- cipal Bank.	Open Mar- ket.
	Pr. cnt.	Per cnt.	Pr. cnt.	Per cnt.	Pr. cnt.	Per cnt.	Pr. cnt.	Per cnt.	Pr. cnt.	Per cnt.
London	3	2¾	3¼	3	3½	3	2⅙	1¾	2⅝	2⅝
Paris	6	—	—	—	2½	2¼	2½	1¾	2⅝	2¼
Frankfort	3¾	3½	—	—	3	2½	2½	1¾	2¾	2
Amsterdam	3½	3⅛	—	4¼	3½	3½	2¾	2⅝	3¼	3
Hamburg	4	3	—	3¼	—	2¾	—	1½	—	2
Brussels	3⅝	3½	—	—	2½	2½	2½	2½	2⅞	2⅝
Berlin	4⅙	3¾	—	4½	4¼	3¼	4	2½	4	3¾
Vienna	5¾	5½	—	5⅓	4⅝	4⅝	4	4	4	4
St. Petersburg	7	6½	—	5¾	6⅝	6⅝	7	7½	7	8
Turin	6	—	—	—	5	5	5	—	5	—
Madrid	5	—	—	—	5¼	5	5	—	5½	—

VIII.

“The last table to be introduced is the usual comparison, by means of approximate percentages, of the variations in wholesale prices between 1st January, 1872, and three former dates:—

(XIV).—*Wholesale Prices in London. Comparison of 1st January, 1872, with Three Former Dates, stating in approximate Percentages the Degree in which the Prices of 1st January, 1872, were Higher or Lower than the Prices brought in Comparison.*

1 Articles.	2	3	4	5	6	7	8	9
	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower
	Than 1st January, 1871.		Than 1st January, 1867.		Than 1st January, 1864.		Than 1st July, 1857.	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Coffee	34	—	5	—	—	6	—	5
Sugar	4	—	20	—	16	—	—	20
Tea	—	—	—	—	—	—	—	—
Wheat	2	—	—	10	27	—	22	17
Butchers' meat	5	—	10	—	16	—	—	—
Indigo	—	—	—	—	20	—	—	—
Oils	6	—	—	20	—	20	—	20
Timber	—	—	20	—	20	—	—	15
Tallow	8	—	12	—	20	—	—	25
Leather	10	—	15	—	20	—	—	15
Copper	25	—	5	—	—	10	—	25
Iron	25	—	24	—	—	—	—	—
Lead	5	—	—	5	—	10	—	25
Tin	15	—	80	—	30	—	7	—
Cotton	25	—	—	30	—	80	20	—
Flax and hemp	—	—	—	—	—	15	—	—
Silk	—	—	—	20	—	—	—	12
Wool	30	—	10	—	—	—	7	—
Tobacco	8	—	—	—	—	50	—	—
Cotton cloth	10	—	—	30	—	60	10	—
Bank Note circu- lation of Great Britain	6	—	8	—	16	—	16	—

Note.—This table is deduced from the percentages given in Appendix, and may be read thus:—On 1st January, 1872, coffee was 34 per cent. *higher* than on 1st January, 1871; 5 per cent. *higher* than on 1st January, 1867; 6 per cent. *lower* than on 1st January, 1866; and 5 per cent. *lower* than on 1st July, 1857.

“The cases of rise of price at 1st January, 1872, as compared with a year previously (1st January, 1871), are striking, and still more striking when compared with 1st January, 1867—the date nearest to the great collapse of 1866. In several cases also the rise is remarkable, even when compared with the high range of market values at 1st January, 1864. But it is curious that when compared with 1st January, 1857, the date immediately preceding the panic of

October of that year, the prices of the present time exhibit generally a considerable decline.

IX.

“The progress of Railway Property in 1871 has been very marked. There is scarcely a line in the United Kingdom which has not improved the condition of its ordinary shareholders; and, as the following abstract shows, the advance of even the last seven years (1865-71) in the magnitude of the railway receipts and mileage is astonishing:—

(XV).—*Railways, United Kingdom, 1865-71. (Herapath's Journal.)*

Year.	Total Receipts.	Increase.	Miles Open.	Average Receipts per Mile Open.	
				—	Increase.
	£	Per cent.	No.	£	£
1865.....	34,985,000	—	12,352	2,892	—
'66.....	36,925,000	6	12,730	2,948	56
'67.....	38,319,000	4	13,172	2,970	22
1868.....	39,223,000	2½	13,340	2,960	10
'69.....	41,025,000	5	13,644	3,029	69
'70.....	43,126,000	5	13,846	3,127	98
'71.....	46,171,000	7	14,002	3,308	188

“In a few cases, the *North Eastern* and *London and North Western*, for example, the ordinary dividend has quite or nearly reached 10 per cent. per annum; and the tendency at present is certainly towards a maintenance, or even towards an advance upon recent progress. That is to say, the probabilities are in favour of the ordinary shareholders obtaining a larger and larger share of the increase in total receipts. The following table will explain this:—

(XVI).—*Twelve Leading English Railways, 1870-71. Increase of Traffic and Dividends on Ordinary Stock. (From Economist, 24th February, 1872.)*

1 Half-Year Ended	3 Traffic Increase.		5 Increased Amount Available for Ordinary Dividend.		6 Proportion of Traffic Increase (Col. 2) available for Dividend (Col. 4).
	Total.	Rates.	Amount.	Equal on Ordinary Capital.	
	£	Per cent. £	£	Per cent. s. d.	Per cent.
31st Dec., 1870....	736,000	5·3	300,000	8 7	40
30th June, '71....	912,000	6·8	427,000	13 2	47
31st Dec., '71....	1,330,000	9·2	785,000	26 9	59

Note.—The table may be read thus:—In half-year ended 31st December, 1871, the total receipts on the twelve railways were 1,339,000*l.*, or 9·2 per cent. over previous half-year, yielding 785,000*l.*, or 59 per cent., as an additional fund available for ordinary dividend, and raising that dividend by 26*s.* 9*d.* per cent.

“ We see here, in the case of the twelve leading English lines, that the excesses of gross traffic have been earned at a progressively less expense—or, what is the same thing, have left progressively-increasing free balances for the benefit of dividend, on the ratios of 40, 47, and 59 per cent. of the respective excesses of gross traffic. There are six causes contributing to this favourable result, viz.—(1) the growing productiveness of branch lines, at first sources of loss; (2) the diminution of foolish rivalry between companies, and a greater disposition to work the whole system as one machine; (3) the effect of steel rails and other scientific inventions in lessening the wear and tear of the track; (4) the better and cheaper financial arrangements of debenture stock over temporary debentures; (5) the more complete education, scientific and practical, of railway managers, and even of railway directors; and (6) lastly, the more rational and instructed vigilance of railway shareholders.

“ The increase in total receipts over the United Kingdom in 1871 over 1870 was 7 per cent., but in the twelve leading English lines as much as 16 per cent.

“ Applications are being made to Parliament this year for amalgamation between the two leading companies, the *London and North Western* and the *Lancashire and Yorkshire*, and also between the *Midland* and the *Glasgow and South Western*. Certain amalgamations in Scotland are also projected.

X.

“ There has been a prodigious and incessant manufacture of new companies in the course of the year, not only in this country but in Germany, Austria, Holland, Italy, and even in Spain; and the universality and applause with which limited liability is now applied to all their creations is a curious comment on the foolish and hasty condemnation of that principle after 1866, as the chief cause of the calamities which render that year memorable. As we then pointed out, it was not limited liability which produced the panic of 1866, but the schemes of a set of men incapable of even comprehending the difference between sound and unsound, and in many cases honest and dishonest enterprise. All the bad limited companies failed then, as they will fail again; and many of the sound ones lived and flourished then, in spite of the general confusion. But it must not be supposed that more than a small proportion of the new companies really obtain a sufficiency of *bonâ fide* subscribers. The old class of truths and shams are as extensively in use as ever, and by and bye the courts of law will be choked with companies in liquidation, and with disputes arising out of their concoction, progress, and decline. So far we have no revival of finance companies as professed manufacturers of new projects; but it is well known that there are several quarters in London and elsewhere where great resources and genius exist for the assistance—always on adequate terms—of the less inventive, fertile, and courageous benefactors of themselves and the human race.

XI.

“ In the earlier part of the year there was a profusion of American

mining companies brought before the English public, and a few achieved wonderful success on the Stock Exchange. But why valuable mines of gold and silver should be offered by astute Americans to the English public at prices absurdly small, if the projectors are to be believed, cannot be understood. Mining is better understood in America than anywhere else, and it is surely consistent with common sense that a scheme which will not sell among the people nearest to it is not likely to be worth purchasing by foreigners four or five thousand miles away, who can only act through agents and be informed of results by printed reports.

XII.

“The Suez Canal is producing powerful results on the India and China trade, and in the regions of the Levant. Steamers adapted to the canal reach Calcutta for London in little over thirty days, and recent improvements in the marine engine enable those vessels to consume about one-tenth less coal—and therefore carry proportionally more cargo—than seven or eight years ago. The canal should now be declared an international highway, and be placed under suitable collective guarantees. Telegraphs are reaching China, Japan, Australia, the West Indies, and by and bye both sides of South America; research and invention are gradually rendering available in Europe the meat supplies, now almost wasted, of Australia, Brazil, and the tropical regions of the New World. Large schemes of railways and colonisation are almost beginning to assume practical shape in Brazil, Buenos Ayres, and the wonderfully fertile countries in the interior of the continent. In North America the extension of railways goes on faster than ever, and amounts to thousands of miles per annum. All these advances and conquests over physical nature are giving a new meaning to commerce, and carrying it to points of expansion, expedition, and power which have not existed before. For example, the saving of capital and labour in the mere diminution of stocks of commodities in their way from the producer or manufacturer to the dealer and consumer, is itself a revolution. We have said that steamers by the Suez Canal reach Calcutta in thirty days. A few years ago a swift voyage *viâ* the Cape was 110 or 120 days. Here is a diminution of 75 per cent. in the stocks of goods in mere transit, with the further circumstance that the telegraph enables dealers and consumers to regulate to a nicety the quantities of commodities to the varying demand. The same principle applies to every trade and transaction, down even to the smallest. It is the wonderful growth of the gross produce in every department of human industry and enterprise which alone accounts for the rapid rise of the standard of comfort, leisure, and enjoyment, which we see in this country descending to the humblest of the labouring classes, and which is equally visible wherever liberty and intelligence permit a population to take part, under stimulus of great and solid material riches, in the new developments of civilised life.”

II.—*The Book Publishing Trade in Great Britain in 1871.*

FROM the *Publishers' Circular*:—

“ We have prepared for our readers, in this, the last number of the year, our analysis of the books of 1871, made up to the end of December, on the same plan as that adopted for our table of last year. It is almost a matter of regret to us that we have not tables on the same plan extending back beyond the present decade, for we should then be able to form a better estimate of the changes and growth of the trade. At its close we hope to be able to do so. Figures are such excellent arguments, and good correctives of the popular inclination to theorise, that we do not hesitate to recommend their closest application, especially to those who are engaged in testing, and interested in comprehending, the demands and tastes of the people in literary matters and requirements. An analysis, such as we append, presents first a view of what publishers have prepared for the readers of the year, month by month, in the figures under *new books*; and secondly, in the figures under *new editions*; it shows what class of books have received the largest amount of favour from the public. Such a comparative view, closely and carefully made, must from year to year present a statistical history of the book trade, by which (Lord Bacon says ‘History is God teaching us by example’) we may be guided and advised in our future enterprises.

“ The *Publishers' Circular* has recorded during 1871, the full transcript of the title pages, with size, price, publishers' names, and number of pages, of 5,317 books. This gross number includes 160 of mere re-entries for changes of price, and 322 imported new American works, leaving a total of new books and new editions published in Great Britain, from 1st January to 31st December, 1871, of 4,835 in the following proportions of 3,547 new books, and 1,288 new editions.

“ An examination of the corresponding table in our issue for 31st December, 1870, in connection with the present, will demonstrate a few notable features. The number of *American importations* has sensibly diminished. Last year's supply being 426 against 322 for this year. We have no explanation to give of this, it not being our intention, in the present article, to state anything but facts—theories are reserved for a future writing. The number of new novels has decreased from 200 in 1870 to 155 in 1871, but the number of new editions of novels has increased from four-fifths of the number of new novels in 1870 to 5 beyond what they amount to in 1871. The increase in *educational works* is well marked; the new books being 479 in 1871, against 406 in 1870. The proportion of new editions is about the same. There is a marked increase in new editions of works on *political economy*; the number being 45, or nearly one-half of the new books on that subject in 1871, against 26 or one-third in 1870. There is a decrease in the number of new books on *travel and research*. Last year's record showed 245,—this year's shows only 144, but the number of new editions in this division is larger than in 1870, thereby raising the average to about one-half of the new books. There is a decrease in the division of *history and biography* in both new books and new editions. The division of *poetry* records 176 new books in 1871 against 212 in 1870, but there is no falling off in the number of new editions. Amongst *miscellaneous* we have included all the pamphlets and brochures connected with the *Tichborne Case* (20), *Dame Europa's School* (about 35), *Battle of Dorking* (30). These tend to augment the gross number of new works in this division.

“ We are disposed to state the opinion that there have been published during 1871 fewer poor books, and more good and valuable books, than has been the case in previous years. We shall be able to test our opinion in this respect, by the number of new editions in 1872. Certainly we have had in almost every branch of literature additions of rare value; and authors and publishers alike have reason to congratulate themselves upon a condition of affairs, both moral and political, which has made it possible for English literature to place many means of social and intellectual progress before the world at the close of 1871, that the world did not possess at the close of 1870. We do not say this in any spirit of boasting or confidence, but with a most devout and thankful recognition of the source of all wisdom and intelligence.”

Analytical Table of Books Published in 1871.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total of Books on each Subject for the Year.
Theology, sermons, biblical, &c.	*33 †13 ‡ 3	35 14 2	35 15 1	45 14 5	56 14 —	59 13 5	33 14 9	44 7 5	30 11 4	42 7 5	72 21 3	78 21 —	562 164 42
													768
Educational and classical	*33 † 8 ‡ 3	22 16 1	36 16 1	38 10 4	39 14 —	40 13 1	48 9 2	50 10 —	36 20 1	29 13 3	68 22 —	42 15 —	479 166 16
													661
Juvenile works and tales	*31 †14 ‡ 3	16 13 1	38 15 1	28 6 1	24 20 —	26 10 1	14 10 2	28 8 1	21 11 1	76 28 4	133 36 7	61 27 —	496 198 22
													716
Novels and other works of fiction....	*22 † 9 ‡ 2	7 10 2	15 19 2	12 19 2	10 15 —	14 12 —	9 9 1	7 10 1	6 17 1	3 9 —	16 17 6	34 14 —	155 160 17
													332
Law, jurisprudence, &c.	* 5 † 2 ‡ 4	1 2 1	7 5 —	11 7 1	8 3 —	8 1 5	3 2 4	5 2 2	— 5 2	7 1 1	5 10 2	15 4 —	75 44 22
													141
Political and social economy, trade and commerce	* 6 †— ‡—	9 1 —	6 6 1	17 4 1	7 6 —	2 5 —	3 4 2	7 5 2	4 5 2	14 2 1	7 6 2	19 1 —	101 45 11
													157
Arts, science, and finely illustrated works.....	*16 † 6 ‡ 7	11 7 —	14 7 4	19 7 4	10 7 —	21 2 4	15 9 3	11 6 7	11 6 1	14 3 5	27 12 1	34 8 —	203 80 36
													319
Travel and geogra- phical research....	*11 † 4 ‡ 3	7 5 1	14 4 3	14 1 2	17 9 2	11 5 5	13 9 4	9 5 1	4 8 3	8 1 1	15 5 2	21 6 —	144 62 27
													233
History and biogra- phy	*11 † 7 ‡ 7	16 5 3	24 5 7	29 8 —	17 6 —	24 3 2	11 6 4	15 3 3	4 3 4	7 4 2	14 5 7	41 18 —	213 73 39
													325
Poetry and the drama	*18 † 6 ‡ 5	9 9 2	24 11 2	24 13 —	12 12 —	13 17 1	8 7 —	10 9 —	5 11 —	5 6 1	12 15 5	36 17 —	176 133 16
													325
Year books and bound volumes of serials	*62 †— ‡ 3	25 1 3	31 1 1	22 — 1	23 — —	18 4 3	19 — 1	15 1 —	12 1 1	11 — 2	49 3 —	72 — —	359 11 15
													385
Medicine and sur- gery	* 7 † 2 ‡ 2	8 1 3	11 5 1	7 2 —	15 9 —	8 2 —	6 6 2	8 2 —	9 — 2	15 5 3	9 9 —	14 5 —	117 48 13
													178
Belles lettres, essays, monographs, &c.	*13 † 5 ‡ 6	9 5 2	11 11 4	10 6 7	19 7 —	12 2 1	14 8 6	10 7 1	12 11 3	22 7 9	26 9 5	22 6 —	180 84 44
													308
Miscellaneous, in- cluding pamphlets, not sermons.....	* 7 †— ‡—	40 — —	38 1 —	34 — 1	27 1 —	18 1 —	25 2 —	21 — —	20 5 —	10 — 1	23 2 —	24 8 —	287 20 2
													309
													5,157

* New books.

† New editions.

‡ American importations.

III.—*Recruits and Deserters.*

FROM the *Times* of 26th February :—

“ The following statement shows the number of recruits enlisted in the United Kingdom and finally approved, and the number of deserters from the army in ten years :—In 1861 there were 8,138 recruits approved, and there were 4,559 desertions ; in 1862, 4,642 recruits and 2,895 desertions ; in 1863, 6,924 recruits and 2,971 desertions ; in 1864, 11,234 recruits and 3,097 desertions ; in 1865, 10,444 recruits and 3,519 desertions ; in 1866, 10,663 recruits and 3,583 desertions ; in 1867, 13,941 recruits and 3,449 desertions ; in 1868, 10,782 recruits and 3,011 desertions ; in 1869, 8,183 recruits and 3,341 desertions ; in 1870, 14,927 recruits and 3,171 desertions. The total number of the recruits in the ten years was 99,878 ; and there were 33,578 desertions, so that one of every three recruits was needed to replace them.”

IV.—*The County Courts.*

FROM the *Times* of 2nd March :—

“ An analysis of the business of the county courts of England (including Wales) shows that in the year 1870 in every 1,000 of the 911,735 plaints entered there was more than one (1,304 in all) for a sum not exceeding 1s. ; 75 for sums exceeding 1s., but not exceeding 5s. ; 577 for sums exceeding 5s., but not exceeding 40s. ; and 347 for sums exceeding 40s.

“ An examination of the *smaller plaints*, the plaints in the first three of these four classes, viz., for sums not exceeding 40s., shows that the great majority of them were for goods sold and delivered, or money lent, or where credit may be inferred to have been given voluntarily, viz., 69 per cent. of the first class (not exceeding 1s.) ; 82 per cent. of the next ; and 85 per cent. of the third of those classes.

“ There were in the year 179,895 executions issued *against goods*. Of every 1,000 of these there was one (152 in all) for a sum not exceeding 1s. ; 55 for sums exceeding 1s. and not exceeding 5s. ; 609 for sums exceeding 5s. and not exceeding 40s. ; and 334 for sums exceeding 40s. Sales were made under the executions in 0.6 per cent. of the first of these four classes, viz., in one case for not more than 1s. ; in 0.36 per cent. of the second class ; in 1.6 per cent. of the third class ; and in 4.8 per cent. of the fourth, the cases over 40s.

“ 6,736 persons were sent to prison ; in 1,000 of these there were nearly 5.5 (37 in all) whose default was in respect of a sum exceeding 1s., but not exceeding 5s. ; 562.7 where it exceeded 5s., but did not exceed 40s. ; and 432.8 where it exceeded 40s. No person was imprisoned where the sum in respect of which default was made did not exceed 1s. ; and in 44 of the 59 circuits no one was imprisoned where it did not exceed 5s.”

V.—*Shipbuilding in the United Kingdom.*

FROM the *Times* of 2nd March :—

“ The Registrar-General of Shipping and Seamen has compiled a return which shows the number and tonnage of vessels, the building of which was completed in the year 1871, at each port in the United Kingdom. The totals are these :—In England, 787 vessels, of 252,925 tons ; in Scotland, 227, of 130,230 tons ; in Ireland, 8, of 7,903 tons ; making 1,022 vessels, of 391,058 tons. At Newcastle

there were also built two iron and two composite steam vessels for war purposes, which have not been measured. The return shows also the vessels in course of construction on the last day of 1871 at each port of the United Kingdom, and the totals are these:—In England, 457 vessels, of 188,673 tons; in Scotland, 247 vessels, of 226,248 tons (a larger tonnage than in England); in Ireland, 6 vessels, of 12,737 tons; making in all 710 vessels, of 427,658 tons, building at ports of the United Kingdom, besides 97 vessels (57 of them at Newcastle), the tonnage of which has not been ascertained, in consequence of the builders' inability or refusal to furnish the particulars. The above total, relating to vessels in course of construction in the United Kingdom at the close of the year 1871, is constituted as follows:—Sailing vessels, 272, of 46,762 tons, viz., 23 iron vessels, of 14,698 tons, and 249 wood, of 32,064 tons; steam vessels, 438, of 380,896 tons, viz., 421 iron vessels, of 379,675 tons, 16 wood, of 1,121 tons, and 1 composite, of 100 tons; making together 444 iron vessels, of 394,373 tons; 265 wood, of 33,185 tons; and 1 composite of 100 tons. There are 25 ports, showing above 1,000 tons in course of construction on the 31st of December, 1871, viz., Glasgow, 141 vessels, of 155,168 tons; Sunderland, 88, of 70,298 tons; London, 46, of 23,598 tons; Greenock, 21, of 22,817 tons; Port Glasgow, 29, of 20,280 tons; Hull, 20, of 19,461 tons; Belfast, 6, of 12,737 tons; Liverpool, 16, of 11,870 tons; Stockton, 11, of 8,817 tons; Shields, 21, of 8,544 tons; and South Shields, 13, of 3,514 tons; Dundee, 10, of 8,261 tons; Aberdeen, 13, of 7,414 tons; West Hartlepool, 9, of 6,485 tons; and Hartlepool, 7, of 4,186 tons; Kirkealdy, 5, of 3,977 tons; Whitehaven, 4, of 3,701 tons; Newcastle, 6, of 3,243 tons, besides the 57 vessels (all steamers, and 54 of them iron) whose tonnage has not been returned; Bristol, 9 vessels, of 2,147 tons; Borrowstoness, 3, of 1,845 tons; Leith, 2, of 1,800 tons; Plymouth, 11, of 1,712 tons; Banff, 7, of 1,402 tons; Bideford, 10, of 1,356 tons; Workington, 1, of 1,050 tons. The return for Middlesbrough shows only two vessels, of 930 tons, but 15 other vessels (all steamers, and of iron) were also building, the tonnage of which is not stated. Cardiff returns 1 vessel of 615 tons, but does not return the measurement of the other five vessels building, 2 of them steamers, and of iron.

REGISTRATION OF THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED SEPTEMBER, 1871.

BIRTHS AND DEATHS—QUARTER ENDED DECEMBER, 1871.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1871-65, and in the QUARTERS of those Years.*

Calendar YEARS, 1871-65:—Numbers.

Years.....	'71.	'70.	'69.	'68.	'67.	'66.	'65.
Marriages No.	—	181,482	176,970	176,962	179,154	187,776	185,474
<i>Births</i> „	797,143	792,129	773,381	786,858	768,349	753,870	748,069
<i>Deaths</i> „	515,096	515,544	494,828	480,622	471,073	500,689	490,909

QUARTERS of each Calendar Year, 1871-65.

(I.) MARRIAGES:—*Numbers.*

<i>Qrs. ended last day of</i>	'71.	'70.	'69.	'68.	'67.	'66.	'65.
March..... No.	36,229	36,506	37,752	36,696	36,441	37,579	36,807
June „	48,652	46,491	43,202	45,364	45,589	48,577	45,827
September „	46,636	43,909	43,978	43,509	44,086	46,257	45,852
December „	—	54,576	52,038	51,393	53,038	55,363	56,988

(II.) BIRTHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'71.	'70.	'69.	'68.	'67.	'66.	'65.
March..... No.	209,787	206,441	203,775	198,584	194,763	196,753	194,130
June „	200,877	203,484	188,618	202,839	199,660	192,437	192,988
September „	192,986	192,178	190,394	192,583	190,782	179,086	181,941
December „	193,493	190,026	190,594	192,852	183,144	185,594	179,010

(III.) DEATHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'71.	'70.	'69.	'68.	'67.	'66.	'65.
March..... No.	138,603	143,991	133,096	119,676	134,008	138,136	140,410
June „	120,870	121,246	118,947	110,010	112,355	128,551	115,892
September „	121,236	124,258	114,644	130,482	108,513	116,650	113,362
December „	134,387	126,049	128,141	120,454	116,197	117,352	121,245

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS
LIVING in the Years 1871-65, and the QUARTERS of those Years.*

Calendar YEARS, 1871-65:—General Ratios.

YEARS.....	'71.	Mean '61-70.	'70.	'69.	'68.	'67.	'66.	'65.
Estmtd. Popln. of England in thousands in middle of each Year....	22,760,	—	22,457,	22,165,	21,882,	21,608,	21,343,	21,085,
Persons Mar- ried	—	16·7	16·2	16·0	16·2	16·6	17·6	17·6
<i>Births</i>	35·0	35·3	35·3	34·9	36·0	35·6	35·3	35·5
<i>Deaths</i>	22·6	22·6	23·0	22·3	22·0	21·8	23·5	23·3

QUARTERS of each Calendar Year, 1871-65.

(I.) PERSONS MARRIED :—*Ratio per 1,000.*

<i>Qrs. ended last day of</i>	'71.	Mean '61-70.	'70.	'69.	'68.	'67.	'66.	'65.
March	12·9	13·9	13·3	13·9	13·5	13·7	14·3	14·2
June.....	17·1	16·9	16·7	15·7	16·7	17·0	18·3	17·4
September	16·3	16·2	15·6	15·7	15·8	16·2	17·2	17·2
December	—	19·6	19·3	18·6	18·7	19·5	20·5	21·4

(II.) BIRTHS :—*Ratio per 1,000.*

<i>Qrs. ended last day of</i>	'71.	Mean '61-70.	'70.	'69.	'68.	'67.	'66.	'65.
March	37·4	36·9	37·5	37·4	36·5	36·7	37·6	37·6
June.....	35·4	36·5	36·4	34·1	37·2	37·1	36·2	36·8
September	33·6	34·1	33·9	34·0	34·9	35·0	33·3	34·2
December	33·7	33·8	33·4	34·0	34·8	33·5	34·4	33·6

(III.) DEATHS :—*Ratio per 1,000.*

<i>Qrs. ended last day of</i>	'71.	Mean '61-70.	'70.	'69.	'68.	'67.	'66.	'65.
March	24·7	25·3	26·2	24·5	22·1	25·3	26·4	27·1
June.....	21·3	21·9	21·8	21·5	20·2	20·9	24·2	22·1
September	21·1	21·0	22·0	20·5	23·7	19·9	21·7	21·3
December	23·4	22·1	22·3	22·9	21·8	21·2	21·8	22·7

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended December, 1871.

1	2	3	4	5	6	7	8	9	10
Quarters ending	Average Price of Consols (for Money).	Average Rate of Bank of England Dis- count.	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.
				Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.		
							In-door.	Out-door.	
1869 Dec. 31	£ 93 $\frac{4}{8}$	2·8	<i>s. d.</i> 46 —	<i>d. d. d.</i> 4 $\frac{3}{4}$ —7 $\frac{1}{2}$ 6 $\frac{1}{8}$	<i>d. d. d.</i> 5—7 $\frac{1}{2}$ 6 $\frac{1}{4}$	<i>s. s. s.</i> 75—100 87	152,021	813,753	43·3
1870 Mar. 31	92 $\frac{5}{8}$	3·0	42 3	4 $\frac{1}{2}$ —7 5 $\frac{3}{4}$	5 $\frac{1}{4}$ —7 $\frac{1}{4}$ 6 $\frac{1}{4}$	95—110 102	164,387	892,822	38·0
June 30	94	3·0	44 8	4 $\frac{1}{2}$ —6 $\frac{3}{4}$ 5 $\frac{5}{8}$	5 $\frac{1}{4}$ —7 $\frac{1}{2}$ 6 $\frac{3}{8}$	115—135 125	144,226	825,337	54·4
Sept. 30	91 $\frac{2}{8}$	3·9	50 4	4 $\frac{3}{4}$ —7 $\frac{1}{4}$ 6	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	100—140 120	138,444	787,976	60·7
Dec. 31	92 $\frac{5}{8}$	2·5	50 1	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	50—90 70	150,729	802,291	41·6
1871 Mar. 31	92 $\frac{1}{8}$	2·7	53 7	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	75—100 87	160,984	878,892	40·2
June 30	93 $\frac{3}{8}$	2·5	59 9	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{2}$ 7	51—76 63	140,338	805,519	51·5
Sept. 30	93 $\frac{3}{8}$	2·2	57 9	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	5 $\frac{3}{4}$ —9 7 $\frac{1}{2}$	60—77 68	132,065	769,482	61·3
Dec. 31	93	4·2	56 3	5—7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{4}$ 6 $\frac{3}{4}$	75—104 89	140,955	758,474	41·8

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	1870. Quarters ending			1871. Quarters ending		
		March.	June.	Sept.	March.	June.	Sept.
England and Wales	22·4	26·2	21·8	22·0	24·7	21·3	21·1
I. London	24·3	27·0	22·1	23·2	27·2	23·1	22·9
II. South-Eastern counties	19·1	23·8	20·0	19·4	21·1	18·6	17·8
III. South Midland „	20·2	24·0	19·7	21·7	23·3	19·4	18·7
IV. Eastern counties	20·1	23·5	20·1	18·9	21·3	19·1	20·1
V. South-Western counties	19·9	25·9	21·2	18·6	23·1	18·7	17·0
VI. West Midland „	21·8	26·7	21·2	21·0	24·1	19·8	19·3
VII. North Midland „	20·8	24·2	20·2	20·9	23·1	19·0	19·5
VIII. North-Western „	26·3	29·0	23·6	25·7	29·5	24·6	25·0
IX. Yorkshire	24·0	25·9	23·6	25·3	24·2	22·0	22·8
X. Northern counties	22·7	24·1	20·2	21·8	24·1	24·9	27·6
XI. Monmouthshire and Wales	21·6	25·9	22·5	18·5	23·6	21·1	17·9

Note.—The rates of mortality in this table have been calculated on populations based upon the recently enumerated numbers, and will not therefore correspond with those published in previous returns.

D.—Special Average Death-Rate Table:—ANNUAL RATE of MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1871-69.

	Area in Statute Acres.	Population Enumerated. 1871.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1871.	Mean '61-70.	1870.	1869.
In 131 Districts, and 58 Sub-districts, comprising the Chief Towns	3,287,151	12,900,297	March ..	26·8	27·4	27·7	26·6
			June	23·0	23·4	22·7	22·8
			Sept.	24·0	23·5	23·9	23·3
			Dec.	26·4	24·7	24·3	25·8
			Year	25·0	24·8	24·7	24·6
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly Small Towns and Country Parishes	34,037,732	9,803,811	Year	19·5	19·7	20·6	19·3
			March ..	21·9	22·7	24·0	21·9
			June	19·1	19·9	20·1	19·9
			Sept.	17·4	17·6	19·1	16·7
			Dec.	19·5	18·7	19·1	19·0

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

E.—Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in last Autumn Quarter, in TWENTY Large Towns.

Cities, &c.	Estimated Population in the Middle of the Year 1871.	Births in 13 Weeks ending 30th Dec., 1871.	Deaths in 13 Weeks ending 30th Dec., 1871.	Annual Rate to 1,000 Living during the 13 Weeks ending 30th Dec.		Mean Temperature in 13 Weeks ending 30th Dec., 1871.	Rainfall in Inches in 13 Weeks ending 30th Dec., 1871.
				Births.	Deaths.		
Total of 20 towns in U. K.	7,199,390	63,673	49,795	35·5	27·8	42·0	5·49
London	3,263,872	27,889	20,991	34·3	25·8	42·8	3·17
Portsmouth.....	113,450	938	623	33·2	22·0	41·2	4·69
Norwich	80,533	649	688	32·3	34·3	40·8	4·97
Bristol.....	183,298	1,603	1,231	35·1	27·0	—	—
Wolverhampton.....	68,476	629	801	36·9	46·9	41·7	4·92
Birmingham	344,980	3,364	2,079	39·1	24·2	42·6	4·37
Leicester.....	95,882	983	621	41·1	26·0	41·3	3·29
Nottingham	86,929	741	726	34·2	33·5	41·6	4·31
Liverpool.....	494,649	4,469	3,631	36·3	29·5	44·6	7·92
Manchester.....	351,488	3,190	2,808	36·4	32·1	42·2	8·53
Salford.....	125,422	1,232	988	39·4	31·6	42·0	8·67
Bradford.....	146,987	1,343	908	36·7	24·8	44·9	—
Leeds	260,657	2,592	1,688	39·9	26·0	43·8	4·87
Sheffield	241,507	2,470	1,915	41·0	31·8	42·5	5·25
Hull.....	122,266	1,087	724	35·7	23·8	40·4	4·47
Sunderland.....	98,797	998	1,017	40·5	41·3	—	—
Newcastle-on-Tyne	128,677	1,202	993	37·5	31·0	38·8	—
Edinburgh	201,728	1,654	1,542	32·9	30·7	41·0	—
Glasgow	479,227	4,495	3,657	37·6	30·6	—	—
Dublin.....	310,565	2,145	2,164	27·7	28·0	44·5	5·22

F.—*Divisional Table*:—MARRIAGES Registered in Quarters ended 30th September, 1871-69; and BIRTHS and DEATHS in Quarters ended 31st December, 1871-69.

1	2	3	4 5 6		
DIVISIONS. (England and Wales.)	AREA in Statute Acres.	POPULATION, 1871. (Persons.)	MARRIAGES in Quarters ended 30th September.		
			1871.	1870.	1869.
ENGLD. & WALES....Totals	37,324,883	No. 22,704,108	No. 46,636	No. 43,909	No. 43,831
I. London	77,997	3,251,804	8,572	7,887	8,102
II. South-Eastern	4,065,935	2,166,217	3,752	3,572	3,714
III. South Midland	3,201,290	1,442,567	2,229	2,239	2,192
IV. Eastern	3,214,099	1,218,257	1,811	1,772	1,686
V. South-Western	4,993,660	1,879,898	3,159	3,121	3,263
VI. West Midland	3,862,732	2,720,003	5,401	5,090	5,115
VII. North Midland.....	3,543,397	1,406,823	2,527	2,470	2,376
VIII. North-Western.....	2,000,227	3,388,370	8,455	7,713	7,632
IX. Yorkshire	3,654,636	2,395,299	5,347	4,872	4,827
X. Northern	3,492,322	1,414,066	2,835	2,765	2,538
XI. Monmthsh. & Wales	5,218,588	1,420,804	2,521	2,408	2,386

7	8 9 10			11 12 13		
DIVISIONS. (England and Wales.)	BIRTHS in Quarters ended 31st December.			DEATHS in Quarters ended 31st December.		
	1871.	1870.	1869.	1871.	1870.	1869.
ENGLD. & WALES....Totals	No. 193,493	No. 190,026	No. 190,231	No. 134,387	No. 126,049	No. 128,146
I. London	27,889	27,670	28,293	20,991	19,339	21,063
II. South-Eastern	16,987	16,465	17,108	9,663	10,402	10,467
III. South Midland.....	11,610	11,533	11,749	7,239	7,641	7,094
IV. Eastern	9,374	9,289	9,601	6,398	6,168	5,824
V. South-Western	14,051	13,512	14,134	10,002	10,051	9,470
VI. West Midland	23,921	23,077	23,214	16,082	14,126	15,181
VII. North Midland.....	12,180	11,867	11,422	7,558	7,305	7,532
VIII. North-Western.....	30,656	29,960	29,935	23,899	22,026	21,871
IX. Yorkshire	21,869	21,995	20,883	14,830	14,369	14,888
X. Northern	13,300	13,225	12,283	9,956	7,461	7,683
XI. Monmthsh. & Wales	11,656	11,433	11,609	7,769	7,161	7,073

G.—General Meteorological Table, Quarter ended December, 1871.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, Esq., F.R.S., &c.]

1871. Months.		Temperature of									Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.						Water of the Thames
		Mean.	Diff. from Aver- age of 100 Years.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.
Oct. ...	49·4	—0·2	—0·9	47·3	—1·1	45·1	—1·1	16·7	+2·0	52·3	In. ·301	In. —·013	Gr. 3·5	Gr. —0·2
Nov. ...	37·6	—4·7	—6·2	35·8	—5·7	33·4	—6·3	10·4	—1·3	42·6	·191	—·058	2·2	—0·6
Dec. ...	38·3	—0·8	—2·0	36·9	—1·9	35·0	—1·9	8·0	—1·5	37·1	·204	—·018	2·4	—0·2
Mean ...	41·8	—1·9	—3·0	40·0	—2·9	37·8	—3·1	11·7	—0·3	44·0	·232	—·030	2·7	—0·3

1871. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.	Mean.	Diff. from Aver- age of 30 Years.	Amnt.	Diff. from Aver- age of 56 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
											At or below 30°.	Be- tween 30° and 40°.	Above 40°.		
Oct. ...	86	— 1	In. 29·785	+·083	Gr. 542	+ 3	In. 1·4	—1·4	Miles. 193	9	12	10	24·4	49·0	
Nov. ...	85	— 3	29·816	+·045	556	— 8	0·6	—1·8	189	21	6	3	16·6	42·7	
Dec. ...	88	0	29·925	+·119	557	+ 5	1·2	—0·8	254	17	14	0	11·0	39·5	
Mean ...	86	— 1	29·842	+·082	552	0	Sum 3·2	Sum —4·0	Mean 212	Sum 47	Sum 32	Sum 13	Lowest 11·0	Highest 49·0	

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of October was 49°·4, being 0°·2 lower than the average of 100 years, 0°·4 lower than the corresponding values in 1870, but higher than in 1869, 1868, and 1867, when 48°·9, 47°·9, and 48°·7 were recorded.

The mean temperature of November was 37°·6, being 4°·7 lower than the average of the preceding 100 years, and 3°·9 lower than in the year 1870.

The mean temperature of December was 38°·3, being 0°·8 below the average of 100 years, and 4°·7 higher than in 1870.

The mean high day temperature of October was higher, and of November and December lower, than their respective averages.

The mean low night temperatures of October, November, and December were respectively lower than their averages.

Therefore the days in October were warm while the nights were cold. In November and December both the days and nights were cold.

H.—*Special Meteorological Table, Quarter ended 31st December, 1871.*

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey	29·644	63·4	25·5	37·9	23·5	8·1	46·9	81
Osborne	29·772	67·1	20·8	46·3	30·4	12·1	43·3	90
Barnstaple	29·739	64·4	22·5	41·9	28·9	10·9	45·5	86
Royal Observatory	29·785	68·4	18·6	49·8	32·7	11·7	41·8	86
Royston	29·807	68·7	19·7	49·0	33·1	12·9	41·4	86
Norwich	29·782	63·0	9·0	54·0	33·2	12·0	40·9	89
Derby	29·739	64·0	17·0	47·0	32·7	11·9	42·3	84
Halifax	29·774	63·9	16·0	47·9	32·1	10·1	40·6	89
Stonyhurst	29·751	65·2	19·5	45·7	31·3	10·2	42·0	81
North Shields	29·803	61·2	25·0	36·2	27·7	10·5	41·8	85

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·4	7	8	8	7	5·5	45	9·73
Osborne	0·3	8	6	8	9	6·2	35	4·61
Barnstaple	0·5	5	7	10	8	3·6	58	10·45
Royal Observatory	0·3	5	6	9	10	6·2	39	3·17
Royston	—	—	—	—	—	5·9	44	2·27
Norwich	—	5	5	10	10	—	41	5·03
Derby	—	6	5	9	11	—	46	4·71
Halifax	0·3	—	—	—	—	6·5	52	7·58
Stonyhurst	—	5	6	7	13	6·8	78	12·55
North Shields	1·6	8	5	7	11	6·7	56	5·70

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER
ENDED 31ST DECEMBER, 1871.

I.—*Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year; also the Number during each Quarter of the Years 1871-67 inclusive.*

	1871.		1870.		1869.		1868.		1867.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
<i>1st Quarter—</i>										
Births	28,902	3·43	28,674	3·44	28,429	3·44	28,697	3·50	27,952	3·44
Deaths	19,756	2·34	22,184	2·66	20,431	2·47	18,042	2·20	19,977	2·46
Marriages ..	5,415	0·64	5,631	0·67	5,291	0·64	5,287	0·64	5,356	0·67
Mean Tem- perature }	39°·1		36°·9		40°·0		40°·6		36°·5	
<i>2nd Quarter—</i>										
Births	30,583	3·63	30,645	3·67	29,472	3·56	30,983	3·78	30,375	3·74
Deaths	18,715	2·22	17,984	2·15	19,449	2·35	16,958	2·07	17,475	2·15
Marriages ..	5,946	0·70	5,754	0·69	5,596	0·67	5,661	0·69	5,627	0·69
Mean Tem- perature }	48°·7		51°·0		48°·4		51°·0		49°·0	
<i>3rd Quarter—</i>										
Births	28,689	3·40	28,272	3·39	27,646	3·33	28,354	3·46	27,870	3·43
Deaths	16,835	2·00	16,555	2·03	16,532	2·00	16,659	2·03	15,125	1·86
Marriages ..	5,424	0·64	5,301	0·63	4,870	0·59	4,704	0·57	5,071	0·62
Mean Tem- perature }	56°·3		57°·1		56°·4		57°·4		55°·2	
<i>4th Quarter—</i>										
Births	27,953	3·32	27,832	3·26	27,848	3·37	27,480	3·35	27,847	3·43
Deaths	19,338	2·29	17,344	2·08	19,377	2·34	17,757	2·17	16,491	2·03
Marriages ..	7,181	0·85	7,102	0·85	6,326	0·76	6,203	0·77	6,564	0·81
Mean Tem- perature }	41°·3		39°·6		40°·9		41°·5		42°·3	
<i>Year—</i>										
Population.	3,366,375		3,335,418		3,304,747		3,274,360		3,244,254	
Births	116,127	3·45	115,423	3·46	113,395	3·41	115,514	3·53	114,044	3·51
Deaths	74,644	2·22	74,067	2·22	75,789	2·29	69,416	2·12	69,068	2·13
Marriages ..	23,966	0·71	23,788	0·71	22,083	0·66	21,855	0·66	22,618	0·69

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts during the Quarter ending 31st December, 1871, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1871.	Estimated to Middle of 1871.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,358,613	3,366,375	27,953	3·32	30	2,679	9·6	10·4
Town districts ...	1,919,316	1,926,732	17,047	3·53	28	1,504	8·8	11·3
Rural ,, ...	1,439,297	1,439,643	10,906	3·03	33	1,175	10·7	9·2

	Population.		Deaths.			Marriages.		
	Census, 1871.	Estimated to Middle of 1871.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,358,613	3,366,375	19,338	2·29	43	7,181	0·85	117
Town districts ...	1,919,316	1,926,732	13,161	2·73	36	4,480	0·93	107
Rural ,,	1,439,297	1,439,643	6,177	1·71	58	2,701	0·61	163

III.—*Bastardy Table:—Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 31st December, 1871.*

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	9·6						
Northern	8·9	Shetland	5·8	Forfar	10·6	Lanark	7·9
North-Western	5·7	Orkney	5·5	Perth	11·2	Linlithgow ..	9·5
North-Eastern	16·0	Caithness	13·5	Fife	6·9	Edinburgh ..	8·3
East Midland ..	9·4	Sutherland....	10·3	Kinross	7·3	Haddington ..	10·9
West Midland ..	6·8	Ross and } ..	3·2	Clackman- } ..	6·1	Berwick	14·1
South-Western	8·1	Cromarty } ..		nan		Peebles	3·9
South-Eastern.	9·0	Inverness	8·1	Stirling	8·5	Selkirk	11·7
Southern	16·2	Nairn	8·3	Dumbarton ..	6·3	Roxburgh ..	12·7
		Elgin	17·1	Argyll	4·9	Dumfries	18·9
		Banff	17·5	Bute	4·1	Kirkeud- } ..	15·2
		Aberdeen	15·8	Renfrew	6·7	bright .. }	
		Kincardine....	15·3	Ayr	10·1	Wigtown	17·1

IV.—*Divisional Table:—MARRIAGES, BIRTHS, and DEATHS Registered in the Quarter ended 31st December, 1871.*

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1871. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND Totals	19,639,377	3,358,613	7,181	27,953	19,338
I. Northern	2,261,622	126,552	226	877	453
II. North-Western.....	4,739,876	166,261	247	1,156	639
III. North-Eastern	2,429,594	393,197	803	3,154	1,827
IV. East Midland	2,790,492	559,187	1,150	4,249	3,127
V. West Midland	2,693,176	250,982	460	1,906	1,249
VI. South-Western.....	1,462,397	1,183,055	2,869	11,119	7,912
VII. South-Eastern	1,192,524	470,355	1,011	3,972	3,179
VIII. Southern	2,069,696	209,024	415	1,520	952

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 30th September, 1871; and BIRTHS and DEATHS, in the Quarter ended 31st December, 1871.

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Popu- lation, 1871. (Persons.)						
		No.	No.	Ratio.	No.	Ratio.	No.	Ratio.
England and Wales	37,325,	22,704,	46,636	2·0	193,493	8·5	134,387	5·9
Scotland	19,639,	3,359,	5,424	1·3	27,953	8·3	19,338	5·7
Ireland	20,323,	5,403,	5,405	1·0	35,017	6·9	22,179	4·1
GREAT BRITAIN AND IRELAND }	77,287,	31,466,	57,465	1·8	256,463	8·1	175,904	5·5

Note.—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have *succeeded* in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births and deaths are much under those of England and Scotland. The marriages also are usually below the ratio for Great Britain, but this quarter they exceed it.—ED. S. J.

Trade of United Kingdom, 1871-70-69.—Distribution of Exports* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Nine Months.					
	1871.		1870.		1869.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES :	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	23,944,	7,754,	19,720,	8,706,	14,521,	7,285,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	34,996,	35,308,	28,169,	25,277,	28,253,	28,968,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	29,894,	18,405,	33,078,	13,427,	31,553,	12,343,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	6,042,	6,926,	4,076,	6,776,	5,438,	6,776,
Eastern; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	17,008,	9,848,	16,009,	12,365,	17,020,	11,481,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco	685,	274,	363,	332,	304,	235,
Western Africa	1,448,	773,	1,008,	704,	900,	651,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	194,	104,	70,	156,	64,	117,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,489,	1,046,	1,399,	1,219,	1,710,	1,002,
South Sea Islands	34,	23,	63,	32,	2,	18,
China, including Hong Kong	8,895,	8,630,	6,536,	8,094,	6,162,	7,419,
United States of America	46,611,	26,340,	37,537,	20,815,	30,130,	19,400,
Mexico and Central America	1,025,	976,	1,011,	825,	1,070,	573,
Foreign West Indies and Hayti	2,955,	2,788,	4,998,	2,976,	4,014,	1,241,
South America (Northern), New Granada, Venezuela, and Ecuador	945,	2,127,	714,	1,718,	1,040,	2,034,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	6,321,	3,076,	6,200,	3,397,	4,440,	2,418,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres	6,879,	6,974,	6,441,	6,302,	6,816,	7,460,
Whale Fisheries; Grnld., Davis' Straits, Southn. Whale Fishery, & Falkland Islands	109,	8,	141,	1,	55,	5,
<i>Total—Foreign Countries</i>	189,474,	131,380,	167,533,	113,123,	153,492,	109,426,
II.—BRITISH POSSESSIONS :						
British India, Ceylon, and Singapore	24,729,	15,185,	20,275,	17,299,	25,192,	14,864,
Austral. Cols.—N. So. W., Vict., and Queensld.	8,361,	4,840,	8,989,	5,116,	7,228,	7,006,
„ „ So. Aus., W. Aus., Tasm., and N. Zealand	4,396,	2,012,	3,607,	1,929,	2,926,	2,464,
British North America	5,132,	7,051,	5,171,	6,001,	3,802,	4,732,
„ W. Indies with Btsh. Guiana & Honduras	6,259,	2,160,	5,233,	2,599,	5,359,	1,831,
Cape and Natal	2,084,	1,464,	1,890,	1,325,	1,864,	1,177,
St. W. Co. of Af., Ascension and St. Helena	566,	471,	257,	488,	395,	479,
Auritius	519,	402,	815,	368,	462,	270,
Channel Islands	441,	613,	369,	526,	356,	458,
<i>Total—British Possessions</i>	52,487,	34,198,	46,606,	35,611,	47,584,	33,281,
General Total	£ 241,961,	165,578,	214,139,	148,734,	201,076,	142,707,

* i.e., British and Irish produce and manufactures.

IMPORTS.—(United Kingdom.)—Whole Years, 1871-70-69-68-67.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(Whole Years.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1871.	1870.	1869.	1868.	1867.
		£	£	£	£	£
RAW MATLS.— <i>Textile, &c.</i>	Cotton Wool	55,767,	53,398,	56,852,	55,199,	51,998,
	Wool (Sheep's) ..	19,565,	16,101,	14,940,	15,304,	16,461,
	Silk*	16,065,	22,954,	18,289,	19,349,	16,128,
	Flax	5,791,	5,979,	4,179,	5,098,	4,180,
	Hemp	6,480,	4,424,	4,122,	4,030,	3,080,
	Indigo	907,	2,721,	3,083,	2,854,	2,422,
		104,575,	105,577,	101,465,	101,834,	94,269,
" " <i>Various.</i>	Hides	5,001,	4,584,	3,299,	3,624,	3,070,
	Oils	5,093,	4,259,	4,340,	4,035,	4,086,
	Metals	9,463,	5,370,	5,336,	5,198,	4,627,
	Tallow	3,112,	3,292,	2,770,	2,944,	2,419,
	Timber	12,081,	11,722,	10,109,	10,279,	9,322,
		34,749,	29,227,	25,854,	26,080,	23,524,
" " <i>Agrcltl.</i>	Guano	1,994,	3,477,	2,641,	1,977,	2,109,
	Seeds	8,106,	4,016,	3,647,	4,348,	3,260,
		10,100,	7,493,	6,288,	6,325,	5,369,
TROPICAL, &c., PRODUCE.	Tea	11,658,	10,095,	10,319,	12,431,	10,068,
	Coffee	5,407,	4,943,	4,927,	4,858,	4,362,
	Sugar & Molasses	18,572,	17,549,	15,928,	15,024,	13,091,
	Tobacco	3,705,	2,153,	2,250,	2,410,	2,380,
	Rice	2,321,	2,156,	2,837,	2,895,	2,026,
	Fruits	3,247,	2,157,	2,804,	2,513,	1,474,
	Wines	7,070,	4,817,	5,266,	5,441,	4,835,
	Spirits	2,896,	3,109,	2,012,	2,086,	2,070,
		54,876,	46,979,	46,343,	47,658,	40,306,
FOOD	Grain and Meal.	42,404,	34,197,	37,252,	39,228,	41,084,
	Provisions	18,219,	15,856,	16,203,	13,859,	9,690,
		60,623,	50,053,	53,455,	53,087,	50,774,
Remainder of Enumerated Articles		36,956,	16,687,	17,212,	14,632,	6,620,
TOTAL ENUMERATED IMPORTS		301,879,	256,016,	250,617,	249,616,	220,862,
Add for UNENUMERATED IMPORTS (say)		24,955,	64,004,	62,654,	62,404,	54,215,
TOTAL IMPORTS		326,834,	320,020,	313,271,	312,020,	275,077,

* "Silk," inclusive of manufactured silk, "not made up."

EXPORTS.—(United Kingdom.)—Whole Years, 1871-70-69-68-67.—Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(Whole Years.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1871.	1870.	1869.	1868.	1867.
		£	£	£	£	£
MANFES.—Textile.	Cotton Manufactures..	57,636,	56,727,	53,002,	52,832,	55,973,
	„ Yarn	15,055,	14,683,	14,158,	14,709,	14,871,
	Woollen Manufactures	27,185,	21,651,	22,625,	19,526,	20,134,
	„ Yarn	6,102,	5,176,	5,858,	6,376,	5,822,
	Silk Manufactures.....	2,054,	2,441,	2,049,	2,107,	1,603,
	„ Yarn	1,270,	160,	213,	215,	179,
	Linen Manufactures ...	7,521,	7,378,	6,798,	7,094,	7,473,
	„ Yarn	2,220,	2,234,	2,329,	2,309,	2,454,
		119,043,	110,450,	107,032,	105,168,	108,509,
	„ Sewed. Apparel	2,699,	2,204,	2,405,	2,290,	2,208,
	Haberdy. and Millnry.	5,920,	4,814,	4,583,	4,476,	4,438,
		8,619,	7,018,	6,988,	6,766,	6,646,
METALS, &c.	Hardware	4,022,	4,513,	4,413,	3,846,	3,934,
	Machinery	5,942,	5,287,	5,102,	4,724,	4,964,
	Iron	26,149,	21,081,	19,519,	15,022,	15,127,
	Copper and Brass.....	3,268,	3,062,	3,586,	3,210,	3,273,
	Lead and Tin	1,623,	4,288,	4,186,	3,600,	3,318,
	Coals and Culm	6,267,	5,507,	5,069,	5,356,	5,400,
		47,271,	43,738,	41,875,	35,758,	36,016,
Ceramic Manufcts.	Earthenware and Glass	2,610,	2,524,	2,664,	2,432,	2,435,
Indigenous Mnfrs.	Beer and Ale.....	1,871,	1,878,	1,896,	1,866,	1,910,
and Products.	Butter	328,	316,	270,	272,	266,
	Cheese	96,	110,	110,	103,	128,
	Candles	181,	116,	161,	202,	183,
	Salt.....	468,	381,	431,	485,	451,
	Spirits	201,	179,	209,	169,	163,
	Soda	1,753,	1,486,	1,379,	1,505,	1,615,
		4,898,	4,466,	4,456,	4,602,	4,516,
Various Manufcts.	Books, Printed	723,	630,	675,	686,	613,
	Furniture	—	222,	243,	200,	200,
	Leather Manufactures	3,662,	2,622,	2,631,	2,433,	1,858,
	Soap	236,	219,	216,	257,	289,
	Plate and Watches ...	192,	552,	507,	409,	417,
	Stationery	532,	488,	497,	418,	378,
		5,345,	4,733,	4,769,	4,405,	3,755,
Remainder of Enumerated Articles		18,149,	15,534,	12,335,	11,252,	10,542,
Unenumerated Articles.....		13,384,	11,178,	9,926,	9,080,	8,565,
TOTAL EXPORTS.....		219,319,	199,641,	190,045,	179,463,	181,184,

SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Twelve Months ended Dec., 1871, as compared with Corresponding Months of Years 1870 and 1869.

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1871.		1870.		1869.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
FOREIGN COUNTRIES.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Russia { Northern ports	1,064,726	804,515	1,033,958	809,699	933,114	689,289
{ Southern „	547,820	216,531	484,149	203,562	366,548	154,312
Sweden	958,988	424,972	996,645	397,014	778,549	322,063
Norway	751,452	301,362	738,493	324,211	647,823	232,775
Denmark	141,672	528,344	165,410	545,801	126,784	422,767
Germany	1,501,468	2,417,335	1,045,667	1,684,999	1,339,735	1,803,685
Holland	743,769	1,026,764	726,114	879,947	724,978	727,613
Belgium	699,924	758,863	598,168	650,945	615,109	606,397
France	1,310,405	2,496,687	1,286,514	2,306,189	1,347,397	2,272,257
Spain	644,148	541,509	517,478	539,433	436,287	500,321
Portugal	258,454	226,107	264,653	242,541	240,949	213,352
Italy	215,832	702,658	182,499	549,645	194,522	494,232
Austrian territories	65,004	176,024	88,443	193,849	167,856	194,548
Greece	78,708	61,518	*	*	*	*
Turkey (including Walla- chia and Moldavia) }	340,975	337,387	450,300	297,508	523,564	347,214
Egypt	379,756	558,473	322,022	481,375	346,591	552,071
United States of America	2,555,227	2,510,692	1,823,173	1,914,107	1,638,699	1,858,504
Mexico, Foreign West Indies, and Central America	195,555	400,620	331,806	385,626	298,904	366,994
Brazil	197,518	403,684	188,063	337,523	212,365	321,173
Peru	176,447	171,656	} 311,389	241,225	254,790	212,157
Chili	66,753	144,922				
China	108,240	69,156	*	*	*	*
Other countries	441,020	545,303	553,261	787,570	552,367	823,239
Total, Foreign Countries	13,443,861	15,825,082	12,108,205	13,772,769	11,746,931	13,114,963
BRITISH POSSESSIONS.						
North American Colonies	1,165,934	758,896	1,150,328	695,406	1,105,329	606,680
East Indies, including Ceylon, Singapore, and Mauritius	928,953	1,174,360	815,569	1,008,715	872,528	1,014,860
Australia and New Zealand	228,194	304,756	183,301	285,114	175,855	357,263
West Indies	236,565	193,262	200,155	161,179	192,238	153,123
Channel Islands	234,954	171,102	†	†	†	†
Other possessions	174,641	657,674	454,117	791,482	393,064	672,998
Total, British Possessions	2,969,241	3,260,050	2,803,470	2,941,896	2,739,014	2,804,924
TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.						
Twelve months { 1871.....	16,413,102	19,085,132	—	—	—	—
{ '70.....	—	—	14,911,675	16,714,665	—	—
{ '69.....	—	—	—	—	14,485,945	15,919,887

* Included in "Other countries."

† Included in "Other possessions."

Note.—The new arrangement of the Board of Trade accounts relating to trade and navigation, prevents the ready comparison of the statistics of shipping with the years preceding 1869 as printed in this *Journal*.

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the Whole Years, 1871-70-69.*

[000's omitted.]

(Whole Years.)	1871.		1870.		1869.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	6,899,	21,	6,478,	7,	7,893,	5,
So. Amca. and W. } Indies	1,172,	3,403,	1,924,	3,760,	2,829,	2,656,
United States and } Cal.	6,493,	5,674,	6,994,	3,387,	1,829,	1,110,
	14,564,	9,098,	15,396,	7,154,	12,551,	3,771,
France	3,702,	1,089,	316,	1,212,	696,	1,792,
Hanse Towns, Holl. } & Belg.	830,	423,	455,	41,	28,	976,
Prtgl., Spain, and } Gbrltr.	58,	55,	55,	104,	65,	126,
Mlta., Trky., and } Egypt	221,	103,	1,177,	43,	203,	17,
China	1,	3,068,	62,	482,	1,	1,
West Coast of Africa	137,	5,	116,	7,	100,	1,
All other Countries....	2,100,	2,686,	1,230,	1,606,	127,	46,
<i>Totals Imported....</i>	21,613,	16,527,	18,807,	10,649,	13,771,	6,730,
Exported to:—						
France	1,569,	1,240,	3,505,	559,	4,194,	3,417,
Hanse Towns, Holl. } & Belg.	2,069,	3,032,	3,513,	5,537,	38,	900,
Prtgl., Spain, and } Gbrltr.	1,907,	1,070,	354,	337,	109,	—
	5,545,	5,342,	7,372,	6,433,	4,341,	3,417,
Ind. and China (via } Egypt)	1,406,	3,041,	1,159,	1,996,	1,537,	2,361,
Danish West Indies	—	—	—	—	—	—
United States	114,	1,	73,	21,	1,050,	2,
South Africa	1,143,	59,	161,	—	44,	—
Mauritius	—	—	—	—	—	—
Brazil	2,121,	—	107,	—	450,	—
All other Countries....	10,369,	4,619,	1,141,	456,	1,048,	1,242,
<i>Totals Exported....</i>	20,698,	13,062,	10,013,	8,906,	8,470,	7,922,
<i>Excess of Imports</i>	915,	3,465,	8,794,	1,743,	5,301,	—
„ <i>Exports</i>	—	—	—	—	—	1,192,

REVENUE.—(UNITED KINGDOM.)—31ST DECEMBER, 1871-70-69-68.

Net Produce in YEARS and QUARTERS ended 31st Dec., 1871-70-69-68.

[000's omitted.]

QUARTERS, ended 31st Dec.	1871.	1870.	1871.		Corresponding Quarters.	
			Less.	More.	1869.	1868.
	£	£	£	£	£	£
Customs	5,614,	5,403,	—	211,	5,740,	5,998,
Excise	5,804,	5,598,	—	206,	5,452,	5,431,
Stamps	2,438,	2,213,	—	225,	2,158,	2,220,
Taxes	36,	22,	—	14,	595,	1,287,
Post Office	1,158,	1,200,	42,	—	1,180,	1,150,
Telegraph Service	160,	160,	—	—	—	—
	15,210,	14,596,	42,	656,	15,125,	16,086,
Property Tax	539,	338,	—	201,	643,	2,018,
	15,749,	14,934,	42,	857,	15,768,	18,104,
Crown Lands	116,	115,	—	1,	113,	112,
Miscellaneous	989,	880,	—	109,	651,	863,
<i>Totals</i>	16,854,	15,929,	42,	967,	16,532,	19,079,
			NET INCR. £924,915			

YEARS, ended 31st Dec.	1871.	1870.	1871.		Corresponding Years.	
			Less.	More.	1869.	1868.
	£	£	£	£	£	£
Customs	20,236,	20,205,	—	31,	22,073,	22,486,
Excise	23,238,	22,437,	—	801,	20,739,	20,214,
Stamps	9,644,	9,020,	—	624,	9,365,	9,174,
Taxes	2,338,	2,971,	633,	—	2,774,	3,477,
Post Office	4,690,	4,650,	—	40,	4,700,	4,560,
Telegraph Service	685,	500,	—	185,	—	—
	60,831,	59,783,	633,	1,681,	59,651,	59,911,
Property Tax	6,688,	7,460,	772,	—	7,531,	8,414,
	67,519,	67,243,	1,405,	1,681,	67,182,	68,325,
Crown Lands	385,	379,	—	6,	363,	359,
Miscellaneous	4,305,	3,647,	—	658,	3,170,	3,176,
<i>Totals</i>	72,209,	71,269,	1,405,	2,345,	70,715,	71,860,
			NET DECR. £940,156,			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST DEC., 1871:—

An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 31st December, 1871; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 31st of December, 1871, in respect of such Charges.

Received:—

	received.	£
Income received, as shown in Account I		16,854,097
Amount received as Advances in aid of Ways and Means		1,000,000
„ in Repayment of Advances for Public Works, &c. ...		512,793
Ditto for Greenwich Hospital		28,173
		<hr/>
		£18,395,063
Excess of the Sums charged on the Consolidated Fund on the 31st of December, 1871, payable in March Quarter, 1872, above the Balance in the Exchequer at that date, viz.:—		
Excess of Charge in Great Britain	£5,068,722	
Surplus over Charge in Ireland	923,887	
Net deficiency	<hr/>	*4,144,835
		<hr/>
		£22,539,898

Paid:—

	£
Net Deficiency of the Balance in the Exchequer to meet the charge on the 30th of September, 1871, as per last account	2,193,544
Amount applied out of the Income to <i>Supply Services</i>	11,068,719
Amount advanced for Greenwich Hospital	28,173

Charge of the *Consolidated Fund* on the 31st of December, 1871, viz.:—

Interest of the Permanent Debt	£6,089,385
Terminable Annuities	2,247,090
Principal of Exchequer Bills	2,900
Interest of " "	39,390
" Deficiency Advances	1,514
The Civil List	101,459
Other Charges on Consolidated Fund	356,646
Advances for Public Works, &c.	403,444
Sinking Fund	7,634
	<hr/>
	9,249,462
	<hr/>
	£22,539,898

* Charge on 31st of December, 1871 (as above)	£9,249,462
Paid out of growing produce in December Quarter, 1871	641,000
Portion of the Charge payable in March Quarter, 1872	8,608,462
To meet which there was in the Exchequer on the 31st of } December, 1871	4,463,627
Net deficiency as above	4,144,835

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),
Fourth Quarter of 1871.**

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1871.		Weekly Average. (Per Impl. Quarter.)					
		Wheat.		Barley.		Oats.	
		s.	d.	s.	d.	s.	d.
Oct.	7	56	3	35	8	23	8
"	14	56	5	36	2	22	6
"	21	56	6	36	10	23	2
"	28	56	7	37	7	23	5
Average for October.....		56	5	36	6	23	2
Nov.	4	56	8	37	5	23	8
"	11	56	5	37	4	23	5
"	18	55	11	36	9	23	—
"	25	55	10	36	8	23	8
Average for November.....		56	2	37	—	23	5
Dec.	2	56	7	36	10	23	8
"	9	56	10	37	1	24	2
"	16	56	5	37	1	22	10
"	23	55	8	36	9	23	—
"	30	55	4	36	5	22	—
Average for December		56	2	36	10	23	—
Average for the quarter		56	3	36	9	23	2
Average for the Year		56	8	36	2	25	2

RAILWAYS.—PRICES, October—December;—and TRAFFIC, January—December, 1871.

[Abstract from "Heraopath's Journal" and the "Times."]

Total Capital Ex- pended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. 52 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 52 Weeks.		Dividends per Cent. for Half Years.		
		1st Dec.	1st Nov.	2nd Oct.	'71.	'70.	'71.	'70.	'71.	'70.	June, '71.	Dec., '70.	June, '70.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
55,2	Lond. & N. Westn.	149	145 ³ / ₄	145	1,516	1,502	7,349,	6,891,	95	88	67 6	72 6	60 -
46,2	Great Western	111 ¹ / ₄	108 ¹ / ₄	104	1,386	1,386	4,485,	4,236,	62	59	45 -	37 6	30 -
19,5	„ Northern...	138	135	134	491	487	2,301,	2,207,	90	87	55 -	82 6	50 -
27,3	„ Eastern	49 ¹ / ₂	47	43 ¹ / ₄	748	748	2,124,	2,042,	54	53	Nil	17 6	Nil
17,8	Brighton	68 ¹ / ₂	69	69	371	368	1,342,	1,253,	69	65	7 6	15 -	„
18,7	South-Eastern	98	96 ³ / ₄	92	346	346	—	—	—	—	26 3	60 -	25 -
17,1	„ Western....	110	109	109	560	560	—	—	—	—	47 6	57 6	40 -
201,8		103 ¹ / ₂	101 ¹ / ₂	99 ¹ / ₂	5,418	5,397	—	—	—	—	41 5	46 -	29 3
38,9	Midland	139	139	138	860	831	4,107,	3,788,	92	87	65 -	67 6	62 6
24,0	Lancsh. and York.	158	156	156	428	423	2,880,	2,622,	129	119	77 6	70 -	70 -
12,9	Sheffield and Man.	74	68 ¹ / ₂	66	254	249	1,260,	1,179,	95	91	15 -	25 -	10 -
42,2	North-Eastern	175	173 ¹ / ₂	169 ¹ / ₂	1,314	1,281	4,920,	4,507,	72	68	82 6	85 -	72 6
118,0		136	134 ¹ / ₄	132 ¹ / ₄	2,856	2,784	13,167,	12,096,	89	83	60 -	61 9	53 9
22,9	Caledonian	118 ¹ / ₄	115 ¹ / ₄	107 ¹ / ₂	704	696	2,253,	2,097,	61	58	47 6	42 6	35 -
6,2	Gt. S. & Wn. Irln.	107	107	105	445	419	—	—	—	—	50 -	50 -	50 -
348,9	Gen. aver.	115	113	111	9,423	9,296	—	—	—	—	48 9	50 11	38 11

Consols.—Money Prices, 1st Dec., 93 $\frac{1}{2}$ to $\frac{5}{8}$.—1st Nov., 92 $\frac{7}{8}$ to 93.—2nd Oct., 92 $\frac{5}{8}$ to $\frac{3}{4}$.

Exchequer Bills.—1st Dec., 1s. to 5s. pm.—1st Nov., 4s. to 9s. pm.—2nd Oct., 3s. to 8s. pm.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the FOURTH QUARTER (Oct.—Dec.) of 1871.

[0,000's omitted.]

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public.	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	(Col. 1 minus col. 16.)	
£	1871.	£	£	£	£	1871. Per ann.
Mlns.		Mlns.	Mlns.	Mlns.	Mlns.	
34,67	Oct. 4	11,01	3,98	19,67	26,30	21 Sep. 3 p.ct.
33,39	„ 11	11,01	3,98	18,39	26,00	28 „ 4 „
34,70	„ 18	11,01	3,98	19,70	25,79	30 „ 5 „
35,93	„ 25	11,01	3,98	20,93	25,08	
36,84	Nov. 1	11,01	3,98	21,84	25,46	
37,43	„ 8	11,01	3,98	22,43	25,14	
38,24	„ 15	11,01	3,98	23,24	24,77	16 Nov. 4 „
38,55	„ 22	11,01	3,98	23,55	24,48	30 „ 3½ „
38,69	„ 29	11,01	3,98	23,69	24,21	
38,73	Dec. 6	11,01	3,98	23,73	24,41	
38,99	„ 13	11,01	3,98	23,99	24,01	
39,33	„ 20	11,01	3,98	24,33	24,07	
39,31	„ 27	11,01	3,98	24,31	24,63	

BANKING DEPARTMENT.

8	9	10	11	12	13	4	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabili- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£	1871.	£	£	£	£	£
Mlns.	Mlns.	Mlns.	Mlns.	Mlns.		Mlns.	Mlns.	Mlns.	Mlns.	Mlns.
14,55	3,67	5,00	22,65	,59	Oct. 4	14,01	23,53	8,37	,55	46,47
14,55	3,10	4,39	22,18	,58	,, 11	16,30	20,44	,7,29	,78	44,81
14,55	3,11	3,76	23,14	,57	,, 18	15,80	19,78	8,91	,65	45,14
14,55	3,12	4,09	23,96	,51	,, 25	15,20	19,46	10,85	,72	46,24
14,55	3,10	4,60	23,29	,55	Nov. 1	15,00	19,05	11,38	,67	46,10
14,55	3,11	5,20	22,76	,53	,, 8	15,00	18,23	12,29	,64	46,16
14,55	3,11	5,63	22,90	,51	,, 15	15,00	17,58	13,47	,65	46,71
14,55	3,12	6,56	22,12	,51	,, 22	15,00	17,15	14,07	,65	46,87
14,55	3,07	7,25	21,02	,48	,, 29	15,00	16,20	14,48	,70	46,38
14,55	3,08	6,92	18,94	2,59	Dec. 6	15,00	16,08	14,32	,68	46,08
14,55	3,08	7,84	20,66	,42	,, 13	15,00	15,91	14,98	,66	46,56
14,55	3,09	8,50	20,53	,43	,, 20	15,00	16,23	15,26	,60	47,10
14,55	3,10	9,09	21,12	,38	,, 27	15,00	17,95	14,68	,61	48,24

LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the FOURTH QUARTER (October—December) of 1871; and in SCOTLAND and IRELAND, at the Three Dates, as under.

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. <i>Saturday.</i>	<i>London: Cleared in each Week ended Wednesday.*</i>	<i>Private Banks. (Fixed Issues, 3,98).</i>	<i>Joint Stock Banks. (Fixed Issues, 2,74).</i>	<i>TOTAL. (Fixed Issues, 6,72).</i>	<i>Weeks ended</i>	<i>£5 and upwards.</i>	<i>Under £5.</i>	<i>TOTAL. (Fixed Issues, 2,75).</i>	<i>£5 and upwards.</i>	<i>Under £5.</i>	<i>TOTAL. (Fixed Issues, 6,35).</i>
1871.	£	£	£	£	1871.	£	£	£	£	£	£
Oct. 7	133,30	2,89	2,48	5,37	Oct. 7	2,04	3,31	5,35	4,19	3,50	7,70
„ 14	92,86	2,94	2,51	5,46							
„ 21	119,32	2,91	2,50	5,41							
„ 28	80,79	2,87	2,47	5,34							
Nov. 4	110,60	2,84	2,43	5,27	Nov. 4	1,85	3,34	5,19	4,56	3,90	8,46
„ 11	93,96	2,82	2,43	5,25							
„ 18	113,13	2,78	2,41	5,19							
„ 25	92,57	2,76	2,41	5,17							
Dec. 2	80,21	2,72	2,38	5,10	Dec. 2	2,09	3,62	5,71	4,43	3,97	8,40
„ 9	133,49	2,68	2,35	5,03							
„ 16	80,53	2,65	2,33	4,98							
„ 23	120,80	2,66	2,35	5,01							
„ 30	63,45	2,68	2,35	5,03							

* The Wednesdays preceding the Saturdays.

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.*

1	2	3	4	5 6		7	8	9
DATES.	London on Paris.	London on Hamburg.	New York.	Calcutta.		Hong Kong.	Sydney.	Standard Silver in bars in London. pr. oz.
				India Council.	At Calcutta on London.			
	3 m. d.	3 m. d.	60 d. s.	60 d. s.	6 m. d.	6 m. s.	30 d. s.	
1871.			per. cnt.	d.	d.	d.	per. cnt.	d.
Oct. 7	26.15	13.11 $\frac{1}{4}$	108 $\frac{1}{2}$	23 $\frac{1}{8}$	23 $\frac{1}{4}$	—	—	60 $\frac{3}{8}$
„ 28 .....	.40	.10 $\frac{1}{4}$	„ $\frac{3}{4}$	„ $\frac{1}{4}$	—	51 $\frac{7}{8}$	—	„ $\frac{5}{8}$
Nov. 11 .....	.32 $\frac{1}{2}$	.9 $\frac{1}{2}$	„ $\frac{5}{8}$	„ $\frac{1}{4}$	23 $\frac{7}{8}$	51	—	61
„ 25 .....	.35	.10 $\frac{1}{4}$	110 $\frac{5}{8}$	„ $\frac{5}{8}$	„	52 $\frac{3}{4}$	—	60 $\frac{7}{8}$
Dec. 9 .....	.22 $\frac{1}{2}$	.10 $\frac{1}{2}$	109 $\frac{1}{8}$	„	25	„	—	„
„ 23	„	.10	„ $\frac{1}{4}$	„ $\frac{9}{16}$	23 $\frac{7}{8}$	„	—	„ $\frac{5}{8}$

JOURNAL OF THE STATISTICAL SOCIETY,

JUNE, 1872.

*The BANK ACT and the CRISIS of 1866.**By HAMMOND CHUBB, ESQ., B.A.*

[Read before the Statistical Society, 16th April, 1872.]

WITH great deference to the Council of this Society, I venture to suggest that inconvenience arises from the absence, in the quarterly *Journal*, of the discussion which takes place in this room after the reading of a paper. I do not for a moment imply that the Society is responsible for the views put forth in the papers which it prints, but the prominence given to those views, without any allusion to the very pertinent remarks by which, in my short experience, they are often controverted, must, in a measure, lead to an erroneous opinion of the position in which a question has been left. I am led to these remarks by the perusal of a paper read last year, by a member of this Society, on the "Rate of Interest during Monetary Crises." Many of the views urged in this paper were admirably met in the discussion which followed, but as the *Journal* is silent as to this, many startling conclusions remain apparently unanswered. Thus, it is stated of the Bank Act of 1844, that it is "perhaps the most absurd and disastrous Act which has ever been placed upon the statute book of this or any other country." Whatever be the opinion of individual members, I venture to think that this Society is scarcely yet prepared to pass a judgment in such sweeping terms.* But, whilst I confess that my present remarks have arisen from a study of the paper to which I have referred, I have no desire now to answer it directly. It would be but a cumbrous mode of conducting an argument, to answer by a paper one year, the views

* It must be remembered that neither the Society nor the Council undertake any responsibility in respect of the opinions expressed in papers printed in the *Journal*, and that no judgment is ever pronounced by the Society upon those opinions or upon what may be stated in the discussions which arise when the papers are read. These papers express the individual opinions of the writers, and they are printed for the information of the Fellows and the public, as evidence of the transactions of the Society, but not as communicating the general views of the members on the subjects treated of. A notification to this effect is printed in each volume of the *Journal*.—(ED. S. J.)

enunciated in another a year previously. I would rather, if I can, treat the subject generally; looking, however, upon the views contained in the paper alluded to as a fair sample of those held by persons who are opposed to the laws which now prevail in regard to the subject treated of.

I must be allowed to make only one other personal observation, which is, that whatever I may say in this paper, I say entirely on my own responsibility, and from my own convictions; and that any opinions I may quote, or facts I may make use of, are drawn always from such published sources as are equally open to every person.

It is my wish, and it is, I am afraid, more than the limits of this paper will permit, to inquire how far some of the ills popularly ascribed to the Bank Act are properly due to it; and then to endeavour, by the light gained from the late crisis, to ascertain whether there be not some other and deeper causes for these ills than those generally urged, and to seek in what direction it would be desirable to make further investigations. Before, however, these questions are entered upon, it is very desirable to examine some of the terms which are used in connection with this subject. From the paper referred to, looking upon it as a fair representation of the reasoning employed by those who approve its doctrines, I select two terms only, not because there are not many others, but because I regard them as being peculiarly unfortunate and dangerous. These two terms are, "The functions of banking," and "Banking currency."

It is said that "the special function of banks, and their sole function apart from the receiving of money in 'deposit,' is to 'mobilise property,' to give *general currency*, in the form of coin, notes, or cheques, in exchange for securities in the form of *commercial currency* (bills) or other kinds of negotiable property." This language I hold to be misleading. The business of a banker is to deal in money—to receive it on deposit on certain conditions, and to employ it, after fulfilling these conditions, in the best way he can for his own advantage. In this he performs many functions. In dealing with the deposits entrusted to him, he finds that he must keep a certain proportion in cash, a certain further proportion he invests in short dated securities, and the remainder, with his own capital, he may invest in Government or other easily realisable securities. Experience tells him that the best short-dated securities are good, legitimate, commercial bills; and he invests in them, not because it is his special function to "*mobilise property*," but because they fall in best with that condition under which he is liable at any time for the deposits left in his hands.

As regards the second term, I find the following definition given of it: "*Banking currency is simply the exchange of one kind of nego-*

“*tible property into another kind more widely negotiable. That is all.*” Can anything be more vague than this? Does it mean that there are to be various degrees in the negotiability of the currency which a banker gives in exchange for a bill he has bought? This I believe to be by no means intended. By the “*other kind more widely negotiable,*” it is probably meant to refer to cheques and bankers’ balances. But these could not conveniently be particularised. On the one hand, it would not answer the writer’s purpose to suggest that a cheque should not at any time be convertible into bank notes, or bank notes into coin; and, on the other hand, it is not intended to limit a banker’s operations by these very inelastic commodities. I am almost forced to the conclusion that the term is used to denote an elastic kind of currency, which shall be gilded, so long only as circumstances may permit, with the fiction of convertibility.

I will assume that there is no need to recapitulate here the chief points of the celebrated Bank Act of 1844, though so much misunderstanding appears still to exist, or at least so many misstatements are made in regard to them, that I am almost tempted to do so. I may, however, say of this Act, that, like many other acts of our English legislature, it is a compromise—having for its object the security and convertibility of bank notes and their regulation beyond and within certain limits, by the unerring index of the foreign exchanges; or, in one word, to give to English bank notes the essential characteristics of money.

The Act, so far as results are concerned, must be judged simply by the answer to the questions, has it or has it not fulfilled the objects for which it was designed? If it be conceded that it has secured the convertibility of bank notes (and I think it may be shown that it has done no more, even if it has done so much), then it has been successful. If it be insisted that in effecting this evils have been brought about, these evils must not be attributed to the operation of the Act, but must be regarded as the accompaniments of the use of convertible bank notes with a regulated issue; and if these evils are held to be intolerable, there is nothing to be done but to revert to the use of notes which may or may not be convertible, and be issued in regard to supposed local requirements, and not with reference to international dealings. I know that there is a school of economists who are not prepared to admit these conclusions, who hold that we may import almost any amount of foreign goods; that we may take up foreign loans; that we may travel abroad and accept foreign services; and, notwithstanding all the cost, have money at home to press on works or the manufacture of goods to any extent our activity or the hope of gain will lead us. Whilst their money is away, they would have a fictitious money at

home—their substance away, its shadow here, with all a shadow's unreality. Those who hold these doctrines, use arguments also which appear to me to be as full of contradiction as the doctrines themselves. In the very paper before me, I find it said, in p. 350, "Secure the currency by all means. Take whatever precautions Parliament may judge necessary to secure the validity of the note,"—whilst the tenor of much of the argument is in favour of a state of things nearly if not quite what it was before 1844. Now the Act of that year is the most distinct utterance Parliament could give of what it does think necessary to secure the validity of the note. Those, therefore, who use this language, appear to be asking for two opposite things in one breath, viz., they ask Parliament to give them free issues, and to authorise this system in spite of a law which lays it down that restriction within certain limits is absolutely necessary.

The Act was a compromise. For with a view to avoid injury to existing interests, it permitted issuing bankers to continue their issues within certain limits. And this is still its weak point. There is little doubt that it was expected that these issues would have been absorbed more quickly than has been the case; and if the Act can be said to have failed in any of its provisions, it is in regard to this subject. Lessons are to be learned from a study of these issues, the force of which it is impossible to believe has been realised by those who advocate a freer issue of notes on any other base than gold. Mr. Gladstone, speaking in 1866, asked with reason, "What part has been played during this period by the country bank circulation? Has it been found available for the wants of the country? There has been an immense demand for notes and coin. If the country bank circulation had been in a satisfactory state, it is evident that not only the notes and coins of the Bank of England, but those of the country banks themselves would have been largely drawn upon. Instead of that, however, we have actually seen the country bank circulation diminished by not less than a million, at the very time of this drain upon the Bank of England." The return given in the Appendix fully bears out this statement. With money at 10 per cent., the issues of private and joint stock banks were 1,000,000*l.* less than they were when the rate was at 6 per cent. Nor, it will be seen, was this peculiar to the year 1866. The crises of 1847 and 1857 exhibited precisely the same results, and bear equally strong evidence of the unsubstantial character in seasons of dear money of issues based on credit. And the mischief does not end here: for, though there are no published returns which would clearly show the extent to which it was carried, it can scarcely be denied that, concurrently with the diminution in the volume of credit notes, there was a great demand for bullion to

support those which remained. These facts go far to refute the views of those who love to picture the plenty that would exist under an unfettered system, and hold that the power to issue notes would be used with freedom whenever the demand for money might be urgent.

The following will, I think, be found to be a fair statement of some of the more serious of the evils which are commonly attributed to the system which obtains under the Act:—

1. The frequent changes in the rate of discount, and especially the prevalence sometimes of very high rates.

2. The contraction of the currency at times when probably the need of it is greatest.

3. The consequent crippling of trade, and the injury to traders who, in other circumstances, could continue to carry on an active business.

The advantages which it is conceived might accrue from some other system, as yet undefined, are of course the very opposites of these evils:—

1. By some means the rate of discount might be maintained at a more even rate.

2. There might be an expanding issue, which would widen the more it is needed.

3. And it is almost implied that all traders, whether doing business within their means, or whether *in extremis*, have a right to the conversion of their “commercial currency (bills) into another “kind more widely negotiable.”

Indeed, if my memory does not deceive me (and here again I regret that there is no record of the many admirable remarks which he made on the paper I refer to), our respected President of last year committed himself to the view that what was wanted was a grand central depôt, where, as a last resort, money might be obtained in times of pressure.

The point which strikes me more than any other in all these complaints is the constancy with which the subject is regarded from one point of view alone. They resemble the impotent cry of the ruined man for the needs of the hour, rather than the calm consideration, at an earlier stage, of the causes which have brought him to ruin.

Let me endeavour to examine some of these complaints.

And first, that as to the fluctuations in the rate of discount, that is, in the price of money; and frequent contractions in its supply. The true answer to this would be that the Bank Act has nothing whatever to do with the matter. It only secures the genuineness of money. Let us look at the question under another aspect. Suppose spirit of a certain proof is ordinarily worth 20s. a-gallon,

but from an excess of demand for it, there ensues a scarcity. Two courses are open to a dealer. He may either put up his price for the true spirit to say 25s., or he may give the same quantity of liquid with one quarter less spirit in it. The price to be paid for the actual spirit is the same in both cases. Those, however, who clamour for increased issues, when gold; the spirit of our currency, runs short, fail to realise the truth of this. Now the Bank Act only says that the former course, the true, straightforward course shall be that taken. If money, from exportation or from excess of employment for it runs short, it says that that which remains shall not be diluted, but fall under the ordinary law of prices. With its plenty or its scarcity the Act has not the most distant connection. And no one can say why money should not follow the course of every other item of trade. If bonds, or shares, or tea, or cotton, become scarce, no one hints that a rise in its price is out of course, or even objectionable. A distinct understanding as to what really constitutes money, would make the matter clear; but this is not always convenient. Not only is there in many minds a confusion (pardonable in some cases, it must be admitted) between money and those expedients for economising money, which for a time, and within a limited area, may perform the functions of money, but there is an almost equal confusion amongst others, between property and money. Because property which is in common request is generally exchangeable for money, they come to regard property as money. The question as to its being in common request quickly takes a second place in the minds of those who naturally are disinclined to depreciate their property; and the belief that in the possession of any kind of property (possibly of goods for which there is no present demand) they possess money, they are indignant that they cannot obtain on their property that which the world will regard as money or currency. Hence this vague notion as to a banker's duty, and the ultimate conclusion that his *sole* function consists in his exchanging that which is not money for, first its representative, and then, when this will no longer answer, for money itself. They fail to see that money is the standard by which these things are valued, but that the things themselves are not money.

The other complaints as to the contraction of the currency and the crippling of trade, as well as the craving for an expanding issue in times of difficulty, hinge of course upon the mistaken views just referred to. Trade and commercial activity are said to be a nation's prosperity. Granted; but what kind of trade? Can there be more than one answer to the question whether this applies to trade carried on within safe limits, or to that which is so overstrained that it must infallibly lead to a collapse?

The increased price of money and the difficulty of obtaining it,

tell us, in the most natural way, that the nation is trading beyond its means, or that we are living too rapidly or too luxuriously. The floating capital of the country, with which enterprises should be carried out, is diminished, and the rate of discount, which is the measure of the value of this capital, rises. But when it becomes necessary to restrict trade, we have the well known picture held up to our pity of the honest trader—the victim to the system—whose trade, good in all other respects, is only crippled because he cannot obtain sufficiently cheaply, the means with which to carry it on. But is “honest” quite the word to apply to such an one? Remember, it is not the trader who has always kept fairly within the compass of his own capital, but the trader who cannot renew his bills, who cannot exchange his “commercial currency,” that is in this precadiment. Such a man has been trading on fictitious capital, and the question is whether trade so carried on can be of advantage. Sir Robert Peel had this very point in his mind when he said, “it may be a question whether there be any permanent advantage in the maintenance of private or public credit, unless the means of maintaining it are derived from the *bonâ fide* advance of capital, and not from a temporary increase of promissory notes issued for a special purpose.” So far as he could speak, he answered the question distinctly enough. Those who think differently, appear to hold this curious position. They cling to a gold currency, for they know it is the almost universal measure of value: they know that its quantity is limited, and that its value, relatively to all other things, is regulated strictly by its quantity; they would not of course wish to separate themselves from other nations, with which indeed they generally desire to extend their dealings, and yet they wish to separate themselves to this extent, that whilst other nations should measure their goods by this common standard, they should have a currency capable of any degree of extension, which shall be gold and yet not be gold. So, too, the speculative trader is always anxious to individualise himself, and yet to be of the nation. “Give me,” he says, “the means I want. I have nothing to do with these national crises.” But he cannot separate himself thus. He has been swelling the volume of fictitious capital; he has been doing his utmost to force into circulation an unreal currency; he has been eating up the temporary fruits of it, and with the break-down of these, he must suffer with the rest.

The dear price which the individual or the nation has to pay for money, may be likened to the pain which a person feels who has carried to excess any natural function, harmless in itself, as eating or walking. May I be allowed to illustrate my reasoning by a very familiar example. A modest manufacturer of any article of

limited consumption, let us say carriage wheels, finds that in very easy times he can get readily an advance by means of bills upon his manufactures; and on this he enlarges his premises, employs more men, and makes more wheels. Finding his paper, based upon these, still acceptable, he carries on a considerable trade. He lives well, and spends freely of his profits. But then comes a time when even carriage wheels fall heavy on the market. Advances on them can only be obtained with the utmost difficulty, or not at all, and what then is his position? His profits spent in good living, and his goods at a discount, the only course for him is to limit his production, and for his friends, through whom he has been able to maintain the prices of his goods, to wait, happy if the natural decay of wheels will in time bring the security for their advances to its ordinary value once more. Had this man by some inventive genius been able to make his goods at half the ordinary cost, he would have benefited the world and himself at the same time; but he only made more things than were wanted, and at a price people would not pay. There are economists who will say that he acted well—that in stimulating trade he did a national service. But this is the point. Manufacturers would indeed have a merry time of it, if they could make their goods without reference to the capacity of the market to absorb them. This question is probably the disagreeable element in their business. Now the truth is that those who urge that a banker's special function is to *mobilise* bills, simply mean, though I do not suppose they will admit it, that it is the duty of a banker to act as a universal customer, and buy up all the goods people choose to make in excess of the demand for them. It is no question here as to the advantages or otherwise of legitimate speculation, I would only decry those who would speculate on other person's means; and that doctrine which lays it down that it is a banker's function to supply those means. "To destroy speculation," says Mr. Hubbard,* "is to destroy the energy of the country." And again, "Speculations undertaken by men of character, of capital, and of credit, will seldom work harm." . . . Further, he says, "It is not the lending at low interest to men who deserve credit, but the lending at *any* interest to men who deserve no credit . . . that occasions so many failures . . . so much ruin." Copious supplies, which it may be assumed never would have been lent, had the credit of the individuals, or the true value of the property securing them been seen in its true light, were advanced in the period under consideration, and the only natural results followed. In examining further into this subject, it will be important to trace how this could have been brought about, and what is the machinery by which

* "The Currency and the Country," 1843.

persons of no credit or concerns of no worth, have been able to attract means for a time from presumably tenacious holders.

That the practice of the peculiar functions of banking, or, as I should prefer to call it, the misuse of the banking system, which was illustrated in the case of an obscure trader, by which a fictitious capital has stimulated trade to an unhealthy state, has been freely practised of late years in this country, may, I think, be proved by the crisis of 1866.

The three great crises since the passing of the Act of 1844, have had each a different origin. Of the two earlier ones, in 1847 and 1857, I shall now say nothing. They would, I believe, illustrate and strengthen my present argument, but they would, unless the subject were treated at greater length than my limits allow, tend to complication. The third and latest, that of 1866, may be called a banking or rather a financial panic, and its causes may, I think, be traced with sufficient clearness. For many years previously the practice had grown up under which many banking and other commercial houses borrowed enormous sums at interest from private lenders, with a view to employing them profitably. In the Appendix I give the accumulations thus held by the joint stock banks in London alone between the years 1861 and 1866, so far as these can be obtained from the unfortunate mode in which their accounts are rendered. The increase here is stupendous, but this statement takes no account of the private firms, discount houses, financial associations and others, which grew up prior to, and about this period. For as the public became initiated into the system under which they found their spare money employed for them, so there very soon grew up a class of undertakings, whose special object was to employ these deposits in commercial transactions, and who held out to their clients, as inducement, the high profits which it was stated this class of business would afford them. Here was the first element of danger, in the existence of a class of pseudo-banking establishments, with vast means at command, prepared to give effect to the false principles of banking which have been enunciated.

The first and great employment of these accumulations was in discounting bills of exchange, or, in the expressive language of the theorists, the giving a *general currency* in exchange for a *banking currency* (bills). But as the supply of good trade bills was limited, and the needs in respect to these were met by the first class houses then existing, and as bills must be had, it followed that in a short time the worthless expectations of almost any hazardous undertaking, fostered into being by the then misunderstood principles of limited liability, came to be represented by bills, and to be regarded

as “banking currency” by those houses who, if they had not received them, would simply have had no business.

This state of things, and what followed cannot be described more truly or more graphically, than in the language of the city article of the “Times” of the 12th May, 1866:—

“For more than three years the speculative propensities of the public have been stimulated by the manufacture of finance bills for millions upon millions. This paper, which ought never to have been admitted within the walls of a respectable bank or discount establishment on any terms whatever, no matter what might have been the character of its endorsements, was taken freely in all directions. . . . Every contractor who wanted to make a railway, or build a city, had only to go to a finance concern, pay them an enormous bonus, and be furnished with what was called ‘money’ in the shape of bills drawn by himself and accepted by the company. Of course these bills were not to be paid till all the grand works in question were completed and had become *bonâ fide* property, although, perhaps, the prospect of that consummation might be at two, five, or ten years date. The reliance was that the bills drawn at short periods of three or six months, might be indefinitely renewed, and so tempting was the operation, and so enormous the apparent profit, that at length the competition of the various companies was such as actually to induce contractors to invent schemes to favour them with this kind of business. . . . The bills answered all the purposes of money. . . . But what is the sequel? At length it is discovered that the prodigality of the national expenditure thus encouraged causes gold persistently to leave the country, so that the outflow can be checked only by a constant enforcement of a high rate of discount.”

This is strong language, but who can say that it is untrue? Is there any need, in order to prove it, to bring forward a list of the unsound schemes which were set on foot about that period? In the Appendix is shown a list of a few of the undertakings in which the single house of Overend, Gurney, and Co. were involved at the date of the transfer of the old business to the limited company. The balances then due on only thirteen accounts amounted to 3,500,000*l.* The hope of recovery was estimated at only 711,500*l.*, and the deficiency considered to be 2,788,500*l.* A complete list would certainly be curious, as showing how thoroughly different tastes had been considered in the modes devised for employing money. Railways, steamships, land companies, hotels, shipbuilding, finance associations, building operations, the purchase of the private businesses of individuals, and banking under improved systems; there is scarcely a branch of industry which did not share

in the false prosperity of the hour, or which was not stimulated into production of some kind entirely beyond the wants of the time, and which did not in turn stimulate individuals to an expenditure, both at home and abroad, utterly beyond the resources of the nation.

A general outline of the course pursued by these concerns is known to most persons conversant with financial matters; to some persons indeed even details must be painfully familiar. Nevertheless, as it may be convenient to take some case in illustration of my argument, I select one only, that of the Chatham and Dover Railway Company. And let me be allowed to say, that I choose this case, not only because it quite satisfies my requirements, but because the great publicity with which its affairs were canvassed, makes it, perhaps, better known than others; and, further, because the cordial admission, even by those who suffered most, of the good faith of those at the head of the company, will absolve me from any suspicion of holding up any individual concern here for any other object than that of illustrating a principle.

The Chatham and Dover Railway Company raised capital, in the three usual forms of ordinary stock, preference shares and debentures, to an amount of 15,253,520*l.*, and expended in works, &c. on their line, 10,625,498*l.* That is to say, that the cost of raising these ten millions and a-half was 4,628,022*l.* This represents the measure of the unwillingness of the public to invest in this undertaking; and the cost of the expedients for obtaining the sum in spite of their unwillingness. The course pursued in the later stages of the company's career, for up to a certain point the ordinary system sufficed, was this. A contractor having undertaken to construct certain sections of the line, subscribed for the ordinary capital issuable in respect of these sections, and gave a receipt to the company as for a sum of money: the company, on the other hand, giving the contractor a receipt for the full amount represented by the shares, in consideration of his undertaking to construct the line. Here was the first step. A certain class of security had been created, valueless, so far as its general acceptance by the public was concerned, but still security of a certain class. On this the law allowed the issue of a certain proportion of debentures, and these were issued at once. But even these ordinarily high class securities were not convertible into money, so little did the investing public encourage the undertaking, and it became indispensable that they should be "mobilised,"—to borrow the term authorised by the advocates of free banking; and to do this they were lodged with societies who, for a consideration, consented to regard them as securities, and on the strength of them accept bills drawn by the contractor. Thus the bonds were converted into what is styled "commercial currency," and here it became the banker's "function."

to do the rest. It was his province to give this *commercial currency* a *general currency* in the form of cheques, &c., and he acted his part bravely.

Here we have the whole system displayed; the various forms of what is termed currency, with the varying degrees of circulation enjoyed by each. And the curious part is that the last form, equally with the first, was fictitious, and that neither rested on any solid foundation whatever.

The results are striking and instructive. Here was a railway which people did not want, and for which they were not inclined to pay. Had it been made with the accumulated or surplus capital of individuals, there might have been a remote chance of some profitable return. The prospect, however, was not attractive, and people would not invest. But people would blindly trust their money to the care of bankers or finance societies, and through them, under the fiction of commercial transactions, they did actually contribute to the very thing they would not look at in its true shape, and that at such stupendous cost, as to render any chance of profit utterly hopeless. But the evil does not end here. Had persons invested capital in the railway, it is very probable they would have lost it, and the matter would have ended. The bills, however, which were ultimately fabricated, were held in numbers by firms who could not possibly know the mysteries of their creation, so that when their worthlessness became apparent, dismay was scattered far and wide amongst a class of persons who would not have dreamt of holding railway property. In short, the result was that bills to a very large amount were in circulation, having the form of true commercial bills, but representing only some unknown share in the works of a hopelessly insolvent railway.

With slight variations adapted to the different circumstances of each case, the system adopted by this company was carried out in a great number of instances; and property of all degrees of value, or which it was hoped might have some value ultimately, but which ought all to have been represented by invested capital, was converted by millions into bills and called currency. Meanwhile the operation of the Bank Act during the same period was precisely what its framers had intended that it should be. By the evident warning conveyed in the rising rate of discount or price of money to those who cared to read the index rightly, it pointed out with unerring truth the extent to which the national resources were being contracted, and trade or expenditure of some kind was being overstrained. And it not only did this, but it did one thing more. Amidst all the depreciation which showed itself on every side and in every shape, when the only result which could happen did come about, the bank note maintained its promise to the letter.

The antagonism, however, between true currency and false, seems to say plainly that there is a flaw somewhere, and people have a right to ask whether these cruel disturbances must be expected periodically. Is the present state of things so perfect that there is nothing to be done but to go on with it, knowing that the terrible reckoning shall come again, with its sure outcry for more money, when there is no more of it to be got; knowing that there will again be heard the often repeated demand for a repeal of the Bank Act—a demand that means simply this—“debase your currency, weaken it out, dilute it, only give us some;—whatever it be, it will suit our needs for the hour. Never mind that ruin will only come a little later—never care that we shall soon see what we now call money divided into two classes, gold what it was and is, but notes meaning anything;—this wretched moment will be got over, and the crash may fall on other shoulders!” This is the question, and for the most part I can rarely detect, in the general consideration given to the subject by writers, any other elucidation than is contained in one or other of these two answers; either that it must be so, and matters be left to work out their own cure, or, that the present Act is wrong, and must be abolished or materially modified.

The question, Must these crises occur? is one to which a consideration of the past must readily supply an answer. Assuming our present system in all its parts to remain unchanged, and the same views in regard to it as have hitherto influenced people, to continue in force, not only may their recurrence be expected, but with considerable regularity. The further question however, Can any measures be taken to avert crises, or rather, to render their coming less probable, or even to modify their effects when they do come? is more difficult to answer. I believe the question to be still in that stage in which inquiry, the collection of facts and the elucidation of first principles, are yet needed. It is in this spirit alone that I venture to approach the subject.

And here let me remark that the chief difficulties which appear to lie in the way of success, are to be found, as I think, in these considerations:—That the causes which tend to produce crises are due to the natural impulses of men, who are actuated by energy, shrewdness, and hope of gain; and that the measures to be taken, or the influences brought to bear upon them, must be of a restrictive character. Look at the last three panics: they have been followed by periods of very restricted trade; then by periods of healthy activity, followed by periods of such excessive and overstrained trading, that another crisis with panic necessarily ensues, in which almost all that is unsound, with much unfortunately that is sound, is ruthlessly swept away. A panic is a terribly stern and violent

remedy. But, if it is to be avoided, the whole power which it exercises of sifting out what is good from what is bad, and all its restrictive effects, or nearly so, must be introduced into our commercial system, only at an earlier stage. The enterprises started before their time, and by other means than *bonâ fide* invested capital, are effectually put an end to by the first panic. What is wanted is, that by some means equally effectual, a stop should be put to such enterprises altogether. We may as well revert to the labours of the alchemists of old, in their endeavour to create gold, as attempt to devise any system by which unsound or overtrading can be long maintained.

The first consideration should be to determine what part of our present system is at fault, this system consisting of gold or notes convertible into gold as a base, with a superstructure of credit.

For some years past the cry has been against the Bank Act, which may be said to control the first part of our system, and it would indeed be difficult to find stronger language against that much abused measure, than has been heard not long since in this room. But I shall have laboured in vain if I have failed to show that the Act has nothing whatever to do with producing panics, otherwise than as a barometer may be said to bring about foul weather when it shows that it is going to happen.

A crisis is caused by an insufficiency of capital for carrying on the undertakings which have been set on foot: a panic is the unreasoning fear of those who find themselves likely to be affected by such a condition of things. The Bank Act does not diminish the supply of capital. It keeps that currency, by which of course capital may be represented, in a sound condition, but it has nothing to do with the amount which may be kept in this country. Our currency is gold, and there is a perfectly sufficient supply of this in the world. If the means of getting rid of it from this country are easy, the means of obtaining it are clear. Too strong a protest cannot be raised against those arguments in which currency and capital are confused, and especially against those popular writers who, taking some period, or even day in times of panic, point to the gold in the Issue Department of the Bank, which is really held by the public in the shape of notes, and picture the relief which would be occasioned if this were suddenly to be distributed through the banking department; forgetting, or, I am afraid, ignoring the evident truth that if their principles had previously been in existence, this stock of gold, along with every other stock, would probably have long before disappeared.

If I have put forward just conclusions in regard to the operation of this Act, and to the causes of the late crisis, it will be apparent that no hope of avoiding a recurrence of the one, is to be

found in any organic change in the other. I do not say that modifications of the Act may not be desirable. It would certainly be of advantage if the extinction of the private issues could by any means be hastened. I believe it would save some misunderstanding if the present complicated system by which the Bank is compensated for the duty of conducting the issue department, were simplified. Other changes might be suggested; but any change which would weaken its power to maintain a pure currency would be a retrograde step, leading simply to disaster.

But if we hold that this part of our system is beyond reproach, it is incumbent to show what part is not; the system consisting, as has been said, of (1) gold, and notes convertible into gold; and (2) a superstructure of credit.

Now the inquiry into the crisis of 1866 has, I think, brought out the fact strongly, that during that period and for a few years previously, there were, in effect, two currencies, if I may call them so—a true and a false. The Bank Act has maintained the one, perfect, simple, and true—a currency which has never failed to perform its proper functions. On the other hand, an extension and misuse of what is called the credit system has fostered the growth of another kind of currency, in the shape of bills, &c., far beyond the proportion it should always bear to the currency founded on gold. This, which is no true currency, and for which indeed a new term has to be employed, viz., “commercial currency,” is of a kind which admits of no regulation, and until it shall collapse, is subject to no restriction, and scarcely any limit.

Let us for a moment see how this is shown in the inquiry. Prior to the crisis trade had been active, foreign loans heavy, expenditure lavish, and capital, as evidenced by the high rate of discount, scarce. Those undertakings, therefore, which should only be carried out by accumulated capital should have been entered into with extreme caution, but, instead of this, the promoters of various works found that they could, for a time at least, obtain unlimited capital by the manufacture of bills, though these had often no other foundation than the possibility that the work might ultimately be carried out, and the hope that it might prove profitable; and when such instruments were created, those were found who, either innocently in the way of business, or under an unfortunate conception of the true functions of a banker, gave these bills—this “*commercial currency*”—a “*currency having a wider circulation*”—not money, for the truth is, as has been stated by Mr. Wolowski, that *money* is but little needed when credit abounds, bankers’ balances and cheques then sufficing.

This extension and misuse of the expedients for economising money, and the danger arising from the practice, did not escape the

foresight of many of our standard writers on the currency. But as their efforts were devoted chiefly to securing the regulation and convertibility of bank notes, this part of the subject held but a second place, and seems to me never to have received that consideration which its vast importance claims for it. Mr. Norman says,* “no multiplication of bills as to amount, no increased facilities “in their employment . . . can, except for a short period, keep “the level of general prices elevated above their real money range.” Of the truth of this there can be no doubt. The question is, what period was in his mind when he used the term “short period?” Probably he could have then had no idea of the ingenious expedients which would have been resorted to prior to 1866, to give, for so long a season as was then experienced, the power he denies to the instruments to which he referred.

Be this as it may, it is this part of our system, and not that which is regulated by the Bank Act, which contains the elements of danger; and it is only, I believe, as this subject is more clearly understood, as the true use of credit and the danger of its abuse are more commonly realised, and as the public mind shall seize the somewhat difficult truth to lay hold of, that instruments founded on credit are not money, that any well founded hope exists, if not of avoiding in the future a repetition of those evils which left so cruel a mark in 1866, at least of modifying their violence when they overtake us.

It would perhaps be wiser for me to end my paper at this point, satisfied if I am only correct in my general conclusions. Anything further can only be regarded in the light of speculations on my part, and be valued simply as such. But if permitted, I venture to indicate the directions in which it seems to me that the subject might be pursued.

In the endeavours to give to credit some of the attributes of currency—to create a false currency when the true has left us—two things are needed; (1) the means which give a semblance of currency; (2) the instruments to which this currency is given: and each demands attention.

As regards the first point, it is a common view to regard such concerns as “Overend, Gurney, and Co.,” certain of the finance societies, and some of the more reckless bankers as the cause of the late crisis. And so no doubt they were by the unwise use of their unhealthy accumulations of idle capital. The danger of this system appears to lie in the uncertain position which the capital thus accumulated holds. A balance on an ordinary banking account, has a

* “Letter on Money,” 1841.

certain element of permanency. The relations of a banker and his client are generally of a lasting character, and, so long as the account exists, it is clearly understood that a fair balance is to be maintained. But those who lodge money at interest, appear to desire all the advantages attaching to the power to realise at will, and yet to obtain the benefits attending permanent investment. The companies who hold money on these terms are almost forced into the purchase of bills; and if there be danger in companies holding, under an obligation to employ it at high interest, money which belongs to individuals who are too ignorant or too timid to invest it for themselves, how much is this danger increased when these holders buy bills, which, really representing invested capital, are studiously devised to blind the holder as to the nature of the investment he is actually making. This has been strongly illustrated in the case of the railway company. They could offer but poor security, but they very much desired capital: there were people who had capital but would not lend it. It needed these go-betweens to receive the timid proprietors' capital, on the plea of holding it at call, and to invest it in the railway undertaking under the fiction of buying bills. Ultimately, of course, the railway company, the finance operator, the original lender, who all, unknown to themselves and each other, had combined to build a worthless railway, together with a vast number of others connected more or less with the system, fell in one common ruin.

If this branch of the subject offers a wide field for consideration, a still wider field will probably be found in regard to the instruments to which a kind of currency is attempted to be given: in other words—bills.

Now I am afraid it will seem a very simple remark, if I express my conviction that there is greatly needed a more general knowledge than now exists in regard to bills and credit instruments, especially as to the occasions when they ought or ought not to be used. Any one who studies the history of a commercial crisis, must be struck with the feeling that some persons seem to be guided in this matter by a code of morality peculiar to itself. The mind is impressed with the idea, and the paper read last year, to which I have referred, seems, if I read it rightly, almost to sanction the notion, that many people regard the creation of a bill, without the most remote thought of its payment at maturity, simply as an ordinary business transaction; that it is a simple financial operation, rather to the benefit of the nation than not; and that the meeting a bill when due, should not be effected by the vulgar device of its payment, but by recourse to further financial operations. Such operations beget a "commercial currency," to which it is "the special function of a banker to give a wider circulation," &c.

A bill may be conveniently described, for the present purpose, as a representative of indebtedness, in such a form that it may pass from hand to hand. If B owes A money, then a bill drawn by A and accepted by B represents the debt, and contains an acknowledgment of it, and a promise of its payment at a given time. If C buys this bill, he buys A's right to recover this debt. It is not a cheque, for that gives the payee a right to a definite portion of a certain sum of money; a bill only gives its holder a right to the result of a claim against a certain person at a certain period; and there is this further difference, cheques can only be drawn to the extent to which they can be met; whereas bills may be drawn to any amount, and every debt, or intended gift or imaginary dealing might be represented by a bill.

Such being the characteristic of bills, it would appear to be desirable that their creation should be restricted to limits within which they cannot be injurious, but only be beneficial; that the fulfilment of the object stated in them be assured; and that the holders of them be given some means of ascertaining that these general principles have been considered; and for this purpose three things appear to be necessary, 1st, that there should be some common understanding as to the conditions under which the creation of a bill is advantageous and not harmful; 2ndly, that the circumstances under which it is created should be such as to warrant its being met at maturity; and 3rdly, that it should bear upon it some evidence of the purpose for which it was created. I know that I lay myself open to be told that bills are based upon credit, and that this being so, it is to the credit of the individuals who place their names upon them, that attention must be paid. But to this I would answer that, whatever the theory may be, the objects I have suggested as desirable are in fact matters of the highest importance to those who would select the bills they hold with care. There are, I believe gentlemen who almost devote their lives to a study of bills with a view to ascertaining the truth on these points; and so proficient do they become, that it is said, from the appearance of a bill they can tell you all about it, almost by a kind of intuition—much as some men can tell which way the wind is going to blow, or whether there is mineral underground. I shall be told again, probably, that the class of bills to which I have referred as causing injury in 1866, were not held by first-class houses with established business. Without pausing to consider how far this amounts to an admission that there are different classes of bills, I would remark that this fact adds to the danger. It is the advance of borrowed money on a bad bill, by a house without established business, that causes harm; it is through the action of such houses, in connection with such

instruments, that loans are granted of that class to which Mr. Hubbard imputes such injurious consequences.

Assuming it, however, to be admitted that the points I have suggested as beneficial in regard to bills, be held to be desirable, it is necessary to examine these instruments to ascertain how far they come up to the standard. To do this, I venture to divide bills into three classes:—

Commercial bills;

Accommodation bills; and

Bills based on property of a stationary character.

The truest example of a good commercial bill, I take to be a bill which represents the value of reproductive capital in some form or other. Goods of all kinds have a period in their history when they may be said to disappear for a time, either in the course of undergoing change by manufacture, or whilst being conveyed from one part of the world to another, or when lying by in a necessarily dormant condition; and the true commercial bill is an instrument by which the capital represented by the goods during such period, shall not be lost to the owners. But the whole point of the arrangement lies in the reproductive character of the goods. The capital represented by the bill should exist only whilst that sunk in the goods is dormant; the moment the goods, so to speak, reappear, the bill should cease to exist. Thus, a bill which is created when a cask of sugar is consigned to the hold of a ship, and is liquidated when that cask reappears and is made use of, falls completely within the definition of a true commercial bill: but a bill representing a share in the ship conveying the cask does not. The greater proportion of ordinary trade bills probably fall within the former category, and fairly fulfil the objects for which such instruments are useful. There are, however, some practices in regard even to these to which I think attention might be directed. Passing by the case, so commonly referred to, of a bill being created on each occasion when the goods it represents change hands, so that there may be many bills based on only one thing of value (for I have not intended to imply that the holder of a bill has any claim on specific goods, but only that bills drawn on goods are clearly within the limits in which they are beneficial), I would point to the pertinacity with which the issuers of some bills cling to the old forms when the surrounding circumstances have greatly changed. Bills on goods shipped from India, for instance, are, I believe, still drawn ordinarily at six months—the period actually consumed a few years ago in the conveyance of the goods to Europe. But this period may now probably be put at four months instead of six. In this case it would follow that one-third of the whole amount of bills drawn on goods shipped from the east—bills which formerly represented the

purest form of commercial bills—now swells the volume of what must be called fictitious capital.

The second class of bills—accommodation bills—need not detain us a moment. We all know what they are. In their best form, they are instruments of doubtful propriety, and are looked askance at by most writers on credit: in their grossest form they are contemptible, and only exist to the extent that the hopeful persons who draw them, can find credulous persons, or worse, to buy them.

The third class of bills, for which it is difficult to find a suitable name, I have illustrated in this paper by those issued in connection with the railway; and it seems to me that they altogether violated the legitimate purpose of bills by converting into what has been so aptly called "*commercial currency*," that which should only have been represented by invested capital. Unless the public had done what they previously had shown a manifest disinclination to do, viz., to invest their surplus capital in the railway works, there was not the slightest pretence for supposing that these bills could be paid at maturity, unless by the issue of others in their stead. I go so far as to say that they were not in fact bills at all. They were in truth little debentures—a small change for the debentures on the faith of which they had been accepted.

Now when a person lends on mortgage, or buys a debenture, it is seldom without inquiry as to the merits of the security, to which the instrument itself at once points him; but to the buyer of a bill the real security can, at the best, be but a matter of guess work, and bills of the class in question, both by their title and their form, carry deception far and wide. Representing one thing, they have been dressed out in a form which has hitherto represented another; and instead of being held by the investing portion of the public, as a mode in which they could dispose properly of a portion of their surplus capital, they have been held improperly by the commercial part of the community as commercial bills. The argument, that bills should be considered simply with regard to the credit of the individuals whose names are upon them, seems, in regard to these bills, to lose all its force. For a contractor may be wealthy, and his capital more than ample for his general purposes; the capital of a shipbuilding company may be quite sufficient for their plant and legitimate trade credit; but when looked at as the chief safeguards in respect of bills which may represent in one case the cost of a line of railway, and in the other, of a fleet of ships, both of which, railway and ships, may turn out unprofitable speculations, these capitals will probably represent but a very modest proportion of the engagements they are presumed to guarantee.

If what I have called true commercial bills need some changes—changes which may perhaps be best left to those who use such

bills to carry out; if also it should seem desirable or possible to make bills falling under the second denomination, bear some clearer indication on their face of what they are than they do at present; the bills coming under the third class, which have sprung into unusual life within these last few years, and which I believe possess elements full of danger for the future, seem to me to need separation from the others by some very clear line of demarcation, and to demand regulations in regard to their issue of a far and more definite character than now exist.

In conclusion, for this paper has far exceeded its proper limits allow me to say one word of apology. I consider that any one coming to this room and saying, "I have a scheme here which will set all our currency theories right, and make all panics things of the past," would be at least an enthusiast, if nothing worse. I have attempted nothing of the kind. As I have selected the crisis of 1866 for consideration, I have of course limited my observations to the working of our system at that period, and have merely endeavoured to point out, in contrast to the sound parts, those weak places in it, which, as I believe, manifested themselves then with peculiar distinctness. With this view I have striven to show that the Bank Act secures us nearly, if not quite, a perfect currency. But as, notwithstanding the Act, we did in 1866 have a crisis, followed by a panic of almost unexampled intensity, I have ventured to suggest that this state of things was owing, in the main, to the introduction and misuse of a spurious currency, if I may call it so, which answered a purpose for a time, to the derangement however of all sound business, as it enabled persons to promote undertakings which the common sense of the nation held to be profitless and unsound, and enabled others, who possessed no capital, to compete on unfair terms for a while with those who had it. I have endeavoured to show that this spurious currency consisted of (I cannot use a better term than that used here last year) "*mobilised bills*," or, in reality, bills having little or no true base, but to which an undue use of banking facilities had given a "*wider circulation*" in the shape of bankers' balances, cheques, &c. Believing this to be the case, I cannot hold with those who would mend matters by repealing the Bank Act: but I lean to the belief that a remedy should rather be sought in connection with those means, by which the creation of this spurious currency to so large an extent is made possible. I am the more strongly led to this view, because it appears to me, that instruments formerly used, and still used with the utmost advantage under certain conditions, have been made use of under circumstances to which they are not adapted. Immense changes have taken place within a comparatively short period—aided by the ease with which public companies can be formed, and

the extension of banking facilities; but no precautions appear to have been taken against the misuse of those instruments which were adapted to a state of things antecedent to these changes. As I have seen public attention but little directed to this branch of the subject, or only feebly so, I have presumed to think that advantage may arise from a wider discussion of it.

If it be said that, whilst I have been bold enough to suggest discussion, I have not ventured to suggest any definite proposals, this is true. I have abstained from doing so, partly on principle, from a feeling that the time is hardly yet ripe for it; and also, I frankly admit, from a profound sense of my own incompetency for such a task. This paper will, however, have fulfilled its object, if it enable me to record in the Society's *Journal* a protest against what I believe to be the unsound views which already appear there; and still more, if it be instrumental in bringing to the subject on which it treats a wider consideration than it appears to receive at the present time.

APPENDIX.

TABLE I.—*Weekly Average Amount of Bank Notes Issued by Private and Joint Stock Banks in England and Wales from October, 1847, to January, 1848, with the Rate of Discount during the same Period.*

1847. Week Ending	Private Banks.	Joint Stock Banks.	Total.	Minimum Bank Rate of Discount.
	£	£	£	Per cent.
Oct. 2	4,402,368	3,155,877	7,558,245	6
" 9	4,489,110	3,170,819	7,659,929	"
" 16	4,522,385	3,223,756	7,746,141	"
" 23	4,412,021	3,177,560	7,589,581	"
" 30	4,223,947	3,054,470	7,278,417	8
Nov. 6	4,039,039	2,880,658	6,919,697	8
" 13	3,869,295	2,729,915	6,599,210	"
" 20	3,715,826	2,594,672	6,310,498	"
" 27	3,635,411	2,527,304	6,162,715	7
Dec. 4	3,571,668	2,455,189	6,026,857	6
" 11	3,524,654	2,408,811	5,933,465	"
" 18	3,507,143	2,396,411	5,903,554	"
" 25	3,525,157	2,417,528	5,942,685	5
1848.				
Jan. 1	3,556,139	2,418,137	5,974,276	5
" 8	3,689,862	2,490,633	6,180,495	"
" 15	3,779,106	2,559,601	6,338,707	"

TABLE II.—*Weekly Average Amount of Bank Notes Issued by Private and Joint Stock Banks in England and Wales, from October, 1857, to January, 1858, with the Rate of Discount during the same Period.*

1857. Week Ending	Private Banks.	Joint Stock Banks.	Total.	Minimum Bank Rate of Discount.
	£	£	£	Per cent.
Oct. 3	3,807,764	3,145,150	6,952,914	5½
" 10	3,887,209	3,176,898	7,064,107	6
" 17	3,877,170	3,153,332	7,030,502	7
" 24	3,811,271	3,079,389	6,890,660	8
" 31	3,778,172	3,093,665	6,871,837	"
Nov. 7	3,715,662	3,073,263	6,788,925	9
" 14	3,628,731	3,024,876	6,653,607	10
" 21	3,499,744	2,914,555	6,414,299	"
" 28	3,269,052	2,779,784	6,048,836	"
Dec. 5	3,239,479	2,641,454	5,880,933	10
" 12	3,137,425	2,530,471	5,667,896	"
" 19	3,052,625	2,457,487	5,510,112	"
" 26	3,020,485	2,429,668	5,450,153	8
1858.				
Jan. 2	3,034,830	2,402,827	5,437,657	8
" 9	3,143,751	2,497,642	5,641,393	6
" 16	3,198,670	2,562,564	5,761,234	5
" 23	3,200,931	2,557,144	5,788,075	"
" 30	3,151,672	2,527,721	5,679,393	4

TABLE III.—*Weekly Average Amount of Bank Notes Issued by Private and Joint Stock Banks, in England and Wales, from April to October, 1866, with the Rate of Discount during the same Period.*

1866. Week Ending	Private Banks.	Joint Stock Banks.	Total.	Minimum Bank Rate of Discount.
	£	£	£	Per cent.
April 7	3,000,982	2,631,737	5,632,719	6
„ 14	3,026,554	2,649,153	5,675,707	„
„ 21	3,002,049	2,628,111	5,630,160	„
„ 28	2,978,588	2,565,187	5,543,775	„
May 5	2,977,668	2,590,947	5,568,615	7
„ 12	2,978,972	2,589,772	5,568,744	8
„ 19	2,891,717	2,523,492	5,415,209	9
„ 26	2,734,531	2,411,921	5,146,452	10
June 2	2,695,546	2,303,240	4,998,786	10
„ 9	2,617,837	2,243,139	4,860,976	„
„ 16	2,552,918	2,199,681	4,752,599	„
„ 23	2,505,741	2,182,365	4,688,106	„
„ 30	2,497,790	2,174,969	4,672,759	„
July 7	2,530,106	2,206,319	4,736,425	10
„ 14	2,535,621	2,222,033	4,757,654	„
„ 21	2,503,014	2,196,048	4,699,062	„
„ 28	2,480,016	2,154,322	4,634,338	„
Aug. 4	2,492,983	2,158,000	4,650,983	10
„ 11	2,515,620	2,176,475	4,692,095	„
„ 18	2,496,361	2,131,276	4,627,637	8
„ 25	2,476,760	2,163,195	4,639,955	7
Sept. 1	2,492,184	2,157,820	4,650,004	6
„ 8	2,526,182	2,184,374	4,710,556	5
„ 15	2,531,284	2,213,770	4,745,054	„
„ 22	2,574,249	2,247,944	4,822,193	„
„ 29	2,674,091	2,295,518	4,969,609	4½
Oct. 6	2,779,987	2,337,034	5,117,021	4½
„ 13	2,901,472	2,414,632	5,316,104	„
„ 20	2,905,819	2,448,255	5,354,074	„
„ 27	2,893,339	2,423,969	5,317,308	„

TABLE IV.—*Statement showing the Amount Held on Deposit by the Principal Joint Stock Banks in London (taken from their Half-Yearly Reports), in each Half-Year, from 1861 to 1866.*

		Number of Banks.	Amount of Deposits Held.	
			£	
1861.....	{	6	43,038,100	
		6	46,854,800	
'62.....	{	6	50,605,600	
		7	50,744,500	
'63.....	{	9	54,212,000	
		9	61,866,000	
'64.....	{	10	69,569,800	
		11	87,283,900	
'65.....	{	11	90,704,100	
		11	89,052,700	
'66.....	{	11	85,648,500	
		9	81,067,600	

Note.—This statement does not include the Bank of England, the private bankers, or the various discount houses or finance associations.

TABLE V.—*List of Certain Firms and Companies to which Messrs. Overend, Gurney, and Co. had made Advances, and the Estimated Value of these Advances at the Time of the Transfer of Messrs. Overend's Business to the New Company.*

	Due to Overend, Gurney, and Co.	Estimated Value.	Deficiency.
	£	£	£
The Atlantic Royal Mail Steam Packet Company	839,345	160,000	679,345
Millwall Ironworks Company and C. J. Mare	422,565	Nil	422,565
East India and London Shipping Company.....	397,653	25,000	372,653
Thomas Howard	331,765	Nil	331,765
Greek and Oriental Steam Navigation Company.....	144,144	7,000	137,144
David Leopold Lewis	341,560	182,000	159,560
Kelson, Tritton, and Co.	291,391	187,500	103,891
Railways belonging to Overend, Gurney, and Co.	243,070	54,000	189,070
Laurence and Fry	148,544	21,000	127,544
T. and G. Garraway	190,977	10,000	180,977
Charles Joyce and Co.	78,729	62,000	16,729
Halliday, Fox, and Co.....	34,628	3,000	31,628
Z. C. Pearson.....	35,693	Nil	35,693
	3,500,064	711,500	2,788,564

The OFFICIAL TRADE and NAVIGATION STATISTICS. By STEPHEN BOURNE, ESQ., Assistant Principal of the Statistical Department of Her Majesty's Customs.

[Read before the Statistical Society, 21st May, 1872.]

CONTENTS :

	PAGE		PAGE
I.—Methods Adopted for Collecting Statistics.....	198	III.—Exports	208
II.—Imports. 1. Sources of Information	200	IV.—Nature of Records and Publications.....	209
„ 2. Particulars Required	201	V.—Alterations in System	211
„ A. Country of Origin	202	VI.—Bill of Entry	214
„ B. Descriptions of Goods	204	VII.—Conclusion	215
„ C. Quantities	204		
„ D. Values	206		

It was my intention, in the paper I have the honour of laying before you this evening, to have grouped the several articles of Import and Export, as shown in the trade returns for the past year, into distinctive classes—according to the use for which they are brought here, or the purposes to which they are to be applied—and to have instituted a comparison between the quantities thus shown and those of one or more former years similarly classified. The classification proposed for the Imports would have embraced the distinctive headings of articles of Food and personal consumption, of Fuel and lighting, of Clothing and habitation, of Works of art and the gratification of taste and amusement; of Raw materials for manufacture, of those for Agricultural operations, and any others which might appear of a sufficiently distinctive character to be worthy of forming a separate class. The years chosen for comparison with 1871, would have been 1861 and 1851, and possibly another decennial period, selecting those in which the census was taken, as being convenient periods for considering the figures so obtained in connection with the growth of our home population, and thus showing our increasing dependence upon the supplies we obtain from abroad. We should thus have seen the extent and the several degrees in which our comfort and happiness—if not our very existence—depend upon the maintenance and growth of our commercial relations, and have had, as I venture to think, a more distinct view of the wide-spread benefits of the

unrestricted intercourse we are enabled to carry on with every producing and manufacturing country throughout the world. In like manner, by a similar classification of our Exports, but varied in accordance with their character and origin, rather than with their appropriation by those to whom we send them, a comprehensive view might have been presented of the various commodities which enable us to pay for the goods we import, whilst at the same time furnishing employment to so large a portion of our industrial population, and adding so greatly to our stores of material wealth. A further statement of the articles drawn hither, simply as to a depôt, from which other countries may obtain their supplies, would have shown how large a proportion of our foreign trade results from the facility with which its operations are here carried on—the consequence of our wealth, our intelligence, our industry, and the undisturbed peace we have so long enjoyed.

In the process of this investigation I should have had to take into account the extensive alterations which have recently been made in the substance and form of our Statistical returns, whereby the comparison between different periods is much disturbed and often rendered difficult. This would have led me to notice the nature and extent of those changes, to have reviewed the history of our statistical progress, and to have given some consideration to the character and scope of our present arrangements for collecting, recording, and publishing the information obtained through their instrumentality. In pursuing this plan, I should have had to derive my facts from the various tables compiled for public use, and though in dealing with them I might have had some advantage from many years of official engagement having enabled me to become conversant with their details and uses,—the conclusions to which I might have been led would have been entirely of personal authority, and have been in no way invested with official sanction. In like manner, for any opinions I may express or inferences I may draw—myself, and myself alone, must be held to be responsible. Having, however, proceeded some distance in the path thus marked out, I became aware of two serious difficulties which stood in the way of a satisfactory completion of the task on the present occasion. In the first place, an unlooked for delay in the compilation of the annual statement, which it was fully expected would have been in the printer's hands at the termination of last quarter, prevented the necessary figures from being available. Had the reading of this paper taken place earlier in the Session, it might have been well to have dealt with the figures for 1871, published in the December monthly account, imperfect and insufficient as they might be; but since those of the revised and perfected annual accounts are so near being ready, it seemed a pity to employ any considerable amount

of time or labour upon those which are subject to correction; and still more undesirable to place on record quantities or calculations which would, though even in minor particulars, differ from the final results of the year's transactions. And in the second place, my object being to put before you such a statement of the principles upon which our collection of statistics rests, of the sources from whence they are derived, of the manner in which they are dealt with, and the results which these labours produce, as may in some measure explain their value and aid in their employment, I found it impossible to compress these remarks within less space than is afforded by the limited time that I am privileged to ask your attention; I am, therefore, most reluctantly compelled to fail for the present in the first part of my self-allotted task, and to seek your indulgence for confining myself to such observations as it may be in my power to offer upon the latter portion of the subject. Should I in so doing overstep the line which separates matters of public or special interest from those of purely official importance, you will, I trust, make allowance for the difficulty of getting out of the groove in which the thoughts of an official are so apt to traverse. If, again, I may seem to enter upon details which are of too trivial a nature to warrant being brought under your notice, I would ask you to bear in mind that the integrity of the accounts depends upon the care which is taken to secure accuracy in the original rendering of small particulars, and seeing to what an extent the official department must be dependent upon the public interest in the attainment of this object, I would hope to enlist your sympathy with such an end, and to provoke your individual and collective influence towards its attainment. It must be quite needless to enlarge upon the advantage to a great commercial country like ours, of having collected together all the information which can serve to illustrate the progress of its commerce; neither can it be requisite to dilate upon the necessity that such information should be as full and accurate as it is possible to make it; but it may not be unimportant to familiarise the minds of those who furnish the materials for, and those who make use of, the publications of this kind, with some of the processes by which they are prepared, and the means by which their completeness and truthfulness may be secured.

I.—Methods Adopted for Collecting Statistics.

The earliest attempt to obtain anything like a systematic collection of authentic commercial statistics, seem to have taken place in the year 1697, when the office of Inspector-General of Imports and Exports was established on a system by which "provision was made that an account should be kept of the trade carried on by England with each foreign country and each of the British settle-

“ments and possessions abroad, showing the goods imported and
“exported, methodically enumerated and classified; their quantities
“by weight, tale, or measure; and their equivalent in money, com-
“puted at certain official rates of valuation then first assigned.”
The necessary information was obtained and condensed by tabulation into prescribed forms at the several ports throughout the kingdom, and being transmitted to this office by the different Collectors of Customs, was then collected into the required records. From these, as occasion offered, extracts were made and collections formed in obedience to requisitions from the proper authorities, or periodically presented to Parliament and issued to the public by the Board of Trade. In later years it was found that the Examiner's, an office originally created to exercise a check upon the correct receipt of the revenue, could conveniently collect the statistics for the port of London, by a system which computed the duties due upon each article of import in the process of bringing them together for the use of the Inspector-General. In 1849, this plan was extended to the out-ports, which, instead of framing accounts each for itself, transmitted to the Examiner duplicates of the original entries passed by the importers. Thus his books of record contained the particulars for the whole kingdom, and it became his duty to forward the whole of the periodical accounts to the Inspector-General, by whom they were again transcribed into the various appointed forms and books. This concentration of the preliminary work under one head was a decided step in the right direction. It ensured greater uniformity in dealing with all matters of detail, lessened the time employed in its performance, and considerably diminished the expense. But there still remained the three offices—Examiner's, Inspector-General's, and Board of Trade, all engaged in the same duty. It became apparent that “to arrest the work at a certain stage of advance-
“ment in one office, for the purpose of committing its completion
“to an entirely different set of workmen, involved a considerable
“sacrifice of both time and strength, for which no corresponding
“advantage was gained,” and “that the union of the two Customs’
“departments would permit an earlier rendering of the periodical
“returns, and result in a marked advancement of the service in
“efficiency and economy.” Yet it was not till 1870 that effect was given to the recommendations made so far back as 1857. Towards the close of the latter year, directions were given for the fusion of these two offices into one; that of Inspector-General of Imports and Exports as well as that of Examiner, ceased to have an independent existence, and the new “Statistical Department” undertook the whole duty; the Board of Trade ceasing to have any share in the production of the accounts, but retaining its control over their nature and form. This change, so long anticipated and laboured

for, has, notwithstanding the temporary confusion incidental to a period of transition, been attended with marked success, and gives promise of still greater satisfaction in its further progress.

This office having thus become the depository for all the information bearing upon commercial statistics, which it is in the power of the Customs' officers to collect; it is evident that its work will resolve itself into the three branches of recording facts, compiling accounts, and publishing returns; and that, though these duties are primarily undertaken for the service of the Government, they are intended ultimately for the benefit of the public, and must, therefore, be so shaped as to meet the wants of those for whom they are performed. It may not be without interest to trace the successive processes by which this is effected, and in so doing, to take first those which relate to the importation of foreign and colonial goods.

II.—*Imports.* 1. *Sources of Information.*

There are three sources from which information regarding these can be obtained: the report by the master of the vessel of the cargo she brings; the entry by each importer of the precise portion of that cargo which belongs to him; and the accounts given by the officer who superintends the vessel's discharge. Powers are conferred by Act of Parliament upon the Board of Customs, to require from the first two of these, such statements as may answer the desired end; the third, being its own servant, is necessarily amenable to such orders as it may issue. The master of every vessel is bound within twenty-four hours of his arrival, and before breaking bulk, to report to the Collector of Customs for the port at which he may arrive, the place from whence he comes, with the number and description of all the packages or parcels of goods comprised in his cargo. Then the importer or owner is bound, before he can obtain permission to have his goods landed, to make an entry setting forth the ship in which, and the country from which brought, the number of his packages, and description of his goods, with their quantity by weight, tale, or measurement, as well as their value. In the comparison of these two statements we have the means of discovering whether one or both have duly brought to the knowledge of the authorities, the fact of such importation; pecuniary penalties being attached to negligence or inaccuracy in these respects. The master has a general knowledge of the nature of the goods he is bringing, but of their precise description, or quantity, and still less of their value, he can have no means of forming a correct opinion. These particulars, however, must be (more or less) known to the parties to whom they are consigned, and this knowledge the Crown demands that they shall impart to its officers, not from any inquisitorial

desire to know the secrets of each individual's trade, but for the security of the revenue, and the acquisition of statistical information from those best qualified to afford it.

The importer's entries are of three kinds, first, those in which the goods being liable to import duty, he tenders payment of the amount due upon them; secondly, those on which duty being chargeable, he wishes to place them in bond until such time as he is ready to pay the duty, or to re-export the goods without payment; and thirdly, those on which no duty being due to the Crown, the goods come into his possession so soon as landed. There is also a fourth kind of entry, when the duty is paid upon goods to be taken out of the warehouse. The first and second together include all the dutiable goods imported; the first and fourth the portion of the same delivered for home consumption.

These entries are passed in duplicate, the originals, when completed, becoming the warrants, by virtue of which the goods they represent are delivered from the ship or warehouse; and the copies, technically termed bills, the foundation for the statistical accounts; for which purpose they are forwarded daily from every port in the kingdom to the central office in London. Those for articles on which duty is being paid, must give correct quantities, otherwise the goods are detained until the error is rectified. They have for many years past been recorded daily in the office registers; but those on which no duty is taken have not, till since the general revision of last year been so dealt with; the records being raised from separate accounts furnished by the officers so soon after the discharge of the vessel as they can be made up. Thus two systems prevailed, goods paying duty being deemed an importation or delivery of the day on which the entry was passed; whilst others only dated from the completion of the landing account, often weeks or months after their actual arrival; and the weekly or monthly return which ought to have shown the full imports for the period, really only included those which were finally examined, and the accounts respecting them made up. This has now been altered, and since the commencement of last year every entry is recorded at once. It therefore becomes of importance that the particulars they contain should be correctly given, and means taken to detect and rectify any errors which may creep in. This being done, it only remains for the department faithfully to perform its functions, and correct statistics must be the result.

2. *Particulars Required.*

The points on which it is essential that accurate statements should be made in these entries are four, relating, first, to the

country from which the goods are brought; secondly, the description of each article; thirdly, its quantity; and lastly, its value.

A. Country of Origin.

For the guidance of the officers and all persons concerned in the passing of entries, there is issued an authorised "List of countries and divisions of countries as they are henceforward to be distinguished on the statistical records of the commerce and navigation of the United Kingdom." This list formerly enumerated 178 countries or parts of countries, many of them being subdivided according to certain arbitrary boundaries, as, for instance, France and Spain, as within and without the Mediterranean; the United States, whether north or south. Many of these distinctions it was found impossible satisfactorily to maintain, and others appeared to be useless. They were, therefore, swept away, and a new list issued with only 112 distinct headings. The result of this condensation will be that certain countries, which have hitherto been specified, will no longer have a separate place, but be included with others in larger divisions. Thus the West Indies are now divided solely according to nationality; all those belonging to Great Britain are included together, and the trade of Jamaica, Barbadoes, &c., will be found merged with the smaller islands under British West Indies. The presidencies of India and the divisions of Australia, are still separately retained.

A complicated question, however, here arises, as to the way in which goods passing through other countries in transit to or from this should be dealt with; whether as imports or exports from or to the original country, or from that to which they are shipped to this country or landed abroad. A ship takes goods from London to Portland in America, to be thence forwarded to Quebec; shall these be deemed as exported to the States or to Canada? Another brings goods from Boulogne, which have been brought by rail from Marseilles, which place they reached from Naples. Are these to be importations from France or Italy? In former times, when railway transit and forwarding companies were unknown, a very simple rule sufficed; goods taken on board at any port were deemed to be an importation from that port; and goods sent to any place were deemed to be exported to the port at which the ship in which they were sent was to unload her cargo. An adherence to this rule leads now to the most anomalous results; very large quantities of goods are received or taken from here, on "through rates," which means that the journey is performed in many stages and with many changes of conveyance, and yet it can be of little consequence how they are carried to or from their ultimate destination or place of

origin. It is often mere matter of accident by which route they are conveyed; yet it makes a vast difference to the trade accounts whether they are assigned to one or the other, and may destroy altogether the comparison of one year with the other. This will be made plain by referring to the trade with British India, or with the countries on the Pacific shores of America. Goods shipped in Calcutta, by a vessel coming round the Cape of Good Hope or through the Suez Canal, will be taken as arriving from Bengal; but should they break their voyage by a railway transit across the Isthmus, and be reshipped at Alexandria, they will be entered as if from Egypt. Again, a Liverpool company is engaged in carrying goods to and from Chili, Peru, and other countries in the Pacific, as well as to Mexico, Cuba, the West India Islands, China, Japan, &c. All those for places this side of the Isthmus of Panama are rightly assigned to their respective countries, because the Liverpool vessel receives or discharges them there, but all which are sent across the isthmus and there delivered by the railway, or carried further by the ships of the same or an allied company, are considered as from or to Colon, in New Granada, where the first vessel commences or ends her voyage. Nor is this evil one that can be easily remedied; and, in the absence of a remedy, the old rule still prevails in some instances, and in others the simpler plan is adopted of disregarding the changes or breaks in conveyance, provided only the journey be continuous. Until this is universally acknowledged, any attempt to ascertain the extent of our trade with such countries as have indirect as well as direct channels for the passage of their goods, or to compare the results of different years, must be utterly fallacious. In all cases the parties entering their goods at the custom houses here, must know from whence they are receiving or whither they are sending, and it is quite as easy, indeed more so, to declare the final rather than the intermediate port. The only principle upon which it is safe to act, seems to be that of considering the terminal points in the journey the goods perform, as those of departure and arrival. Yet this will fail to be precise when they change hands between these points, and is at best insufficient to deal with those which are repacked or arranged for further transit. Jamaica at one time owed its commercial importance to being the depôt for goods afterwards sold to the traders with South America. St. Thomas and Nassau are still places of considerable trade, but of small consumption. There are some countries, such as Switzerland, from her having no ports, with which we appear to have no trade; and many others, Austria for instance, which show but little, because the greater part passes through others; although our relations with both these may in reality be as direct as it is in cases where it is more clearly manifest. It is very desirable that attention should be

directed to all these points, as showing that many of the results at which we arrive cannot be taken without some limitation, and also for the purpose of eliciting opinions which may aid in the acquisition of perfectly accurate statistical knowledge.

B. Descriptions of Goods.

The next essential point is that which determines the precise description of the articles imported. This, like the country of origin is regulated by a "List of articles of merchandise, imported into the United Kingdom, showing the designations by which they are to be distinguished," enumerating 389 distinct articles, and having an appendix for "certain articles which are not specifically enumerated in the import list, showing the revised denominations under which they are to be distinguished in the entries," in which 417 other articles are mentioned. The lists under which the articles were kept in the accounts prior to last year were extended to 886 heads, embracing numerous subdivisions now omitted, because it had been found that the attempt to keep them up only tended to produce errors. In the case of articles of large import and distinctive character, there is no difficulty in determining to what denomination they belong. Wheat, cotton, tea, wine, at once assume their proper position, but with many articles, manufactured ones especially, the class in which they should be placed is very doubtful. A clock, for instance, would seem to be a clear title under which to include every description, but in many of those imported, the timepiece is the least valuable part; for the case and stand may be works of art, of metal, porcelain, wood, or other material, and would then properly fall under other heads. The list at present in use has been prepared with much care, with a desire to give a distinct place to every article of commercial importance, and to exclude those of limited or unfrequent importation; yet many are excluded or grouped together, which the importers or producers of the article would wish to see specially distinguished. It is to be feared that in the condensation which has taken place, information which for many reasons would be very valuable has ceased to be noted. Those who consult these accounts from time to time discover omissions which they regret, and endeavour to have them repaired; but there is the great difficulty that any alteration not only increases labour, but destroys comparison with the accounts already published under a different regulation.

c. Quantities.

The third point has reference to the quantities of the article. With those that are liable to duty there is not so much difficulty,

since sooner or later they will be weighed or measured for the assessment of duty, but for those which yield no revenue this would be impracticable. Besides the expense, it would involve such a delay in dealing with the goods as to seriously impede the operations of trade, and in very many cases goods are so packed as make it troublesome and destructive to ascertain the contents of the packages in which they are contained. Until recently, the importer's entry for free goods, although stating the number, weight, or measurement, as the case might be, was not taken as correct until endorsed by an officer who, without actually examining the goods, exercised such a supervision over their landing as would, it was thought, enable him to detect any serious error. With dutiable goods going into bond, no weight, &c., at all was stated by the importer, and none could therefore be taken to account until the necessary examination of the goods discovered the exact quantity. It was proposed many years ago, that the importers should render an account of the contents of their several packages, but a fear lest they should not be able to do so with sufficient accuracy prevented this plan being adopted until recently. The extreme importance, however, of obtaining information on this point at an early period, and the consideration that in dealing with large numbers of entries, minor errors would balance each other, so as to leave the ultimate results substantially accurate, caused a change in the system. Now the first records are made from the importer's entries. Most articles are brought here in packages of certain recognised sizes, the usual weight or measurement of which become known to those through whose hands they pass, and even in the absence of any invoice or other statement, the exercise of ordinary care in computing the quantity a number of packages will contain, is certain to give a very near approach to accuracy.

As before stated, in the case of goods liable to duty on consumption in the United Kingdom, it becomes necessary for revenue purposes to ascertain the exact quantities, and therefore the statement in the entry is only provisional. It may and does serve a temporary purpose, but the permanent records are corrected so soon as the landing accounts are made up. The same means of correction do not exist with respect to goods that are free of duty. These are subjected only to a cursory inspection by the examining officers, who are directed to satisfy themselves by examination of the goods or the wharfinger's landing accounts, that the variation is not excessive. If the error be beyond 10 per cent., either more or less, a correction is made, but those of a lesser degree are thought to balance each other, on the principle that where the basis on which the calculation rests is sound, the average result may be safely taken. Given the usual weight of a cask of tallow, or the contents of a pipe

of wine, and it is very improbable that the sum of a thousand estimates will be very far from the truth.

D. *Values.*

There remains then but one point in which the accuracy of the statistics depends upon that of the information derived from the importer's entry, namely, the value, and this is one of great difficulty, the results hitherto obtained being far less satisfactory than they have been in other respects. So far as regards any particular article, and comparison in it of one year with another, quantity is a far better test than value, the one being a fixed, the other a fluctuating standard; but for the purpose of bringing together the various articles which each country sends us, or of ascertaining the extent of our trade with the whole world, no other means exists but the reducing of all to one common equivalent. The asking of these values from the importer, is quite an innovation on previous methods of acquiring this knowledge. Previous to 1871, the real values of all articles that could be entered either by tale, weight, or measurement, was computed, not declared; the basis of computation being obtained from special lists of prices furnished by appointed agents, an examination of the ordinary prices current, and any other available source which could guide the judgment of those by whom they were estimated. This system had the defect that it could take but little account of the special qualities of the parcels of goods at any time imported, but only the average market price of each month, excepting in so far as the agent employed had knowledge of the class of goods then coming forward. For some articles, this average was very accurately ascertained; of these, tea may be cited as an example, but then almost all of it is brought to the port of London, and is there disposed of by public sale, or through the instrumentality of a few brokers to whom the actual quality of each month's arrival is well known. But in others, say wine, the quality, and therefore the value, could scarcely be ascertained; yet even in it a tolerably correct average could be struck by those who had the opportunity of consulting the various importers. The present system has great disadvantages, arising from the want of knowledge on the part of the importers, the indifference of many who pass the entries, and the impossibility of the department exercising a valid check. It is well known that a very large proportion of the goods sent to this country are on consignment, and not on purchase, in which case there is no invoice or statement of prices. In these cases the consignee is very much in ignorance of their quality or price, and therefore unable to fix a proper value until they have been examined and sampled. Where,

again, as is very frequently done, the entry is made by a mere agent, who may gather the description of the goods from the ship's report, and estimate the weight from the nature of the packages ; there is no guide at all to the value. In other instances there is great indisposition to let the true value be known. Supposing, as is constantly the case, wine to be brought from Hamburg in casks, branded with the mark of the best Spanish vintages, it is very improbable that, however vile the stuff may be, it will be valued at less than the price of good sherry. The greatest vigilance, therefore, is necessary to guard against the most erroneous values, but the department can only interfere in extreme cases, for it is unable to discover or question any but very extravagant departures from the average. The law has given it the power of calling for invoices or other proof, which is frequently done, and fines are often inflicted for wilful or careless departures from the truth. The only real security, however, is in exciting an interest amongst those who have to declare the value. When once it is understood that these and other particulars are of real importance, there is too much good feeling and desire to do what is right, in importers generally, to permit of other than the best information it is in their power to give being placed at the disposal of the authorities. There seems, however, no way of providing for the very numerous cases in which the consignee is ignorant of the value, or the agent who puts in the entry is without instructions to guide him. At present, the change of system produces, in many articles of import, an apparently great divergence between the values of this and former years. Had the old plan, as was originally intended, been maintained for one or two years, in conjunction with the new, it would have served as a basis of comparison, and have shown whether the present method is of sufficient advantage to compensate for the increased labour and cost its introduction occasions.

In the earlier stages of the system established on the formation of the Inspector-General's office, the value was taken from fixed official rates, founded on the ascertained prices which all known articles bore in the year 1694, with the addition of such new articles as afterwards sprung up, at the prices they each bore in the first year of their introduction. These values remained unaltered, and were used down to 1870, for the computation of the "official value" now altogether abandoned. It was supposed that by a continuous computation of the value at the same rate year after year, a comparative statement would be arrived at of the true progress of trade ; and that by applying the same price on all occasions, the total value would furnish a measure of quantity. This was strictly true as regarded the articles singly, and would also be true of them collectively, so long as the relative quantities of each bore the same

proportion to that of others and to the whole. Thus France sends us both wheat and wine; if in any one year the quantities were equal, but in another year the quantity of the one be reduced, and that of the other increased, each by one half, the “official value” of the whole to be a measure of quantity, ought to be the same; but inasmuch as the rate of the two articles would differ, the calculated result would differ also. Again, this country is a large importer of agricultural produce and raw material, many articles of which, from increased demand and diminished supplies, have greatly risen in value; and is a large exporter of manufactured goods, which, from improvements in machinery and extended employment of capital, have fallen in the cost of production. Last year we imported, principally from France, 3,351,106 great hundred of eggs, valued at 1,265,484*l.*, and exported to France 87,969,530 yards of cotton, at a value of 1,688,094*l.*, leaving us debtors to that country, so far as these two articles are concerned, of nearly half a million of money. The actual value of the eggs was about 6*s.* per great hundred, and of cotton 4½*d.* per yard, but the “official” rates were 9*d.* and 1*s.* 6*d.* respectively. Calculating the values at these, the eggs would be worth but 131,666*l.*, and the cottons 6,597,700*l.*, showing a balance in our favour of nearly six and a-half millions, instead of against us of a half million. This is doubtless an *extrémé* case, but some such process of change has been going on in most of the articles and countries with which we have trading relations. It is clear, therefore, that any reliance upon the “official values” could only lead to mistaken opinions and fallacious results. It was considerations of this kind that led to the substitution of a declared value for exports in 1798, and a computed value for imports in 1854, this latter being again changed last year to a declared value like that given for the exports.

III.—*Exports.*

An analagous process to that thus described for the Imports is pursued with the Exports. The countries are kept under the same headings, and a similar list enumerates 211 articles of which a separate account is kept, in lieu of 446 which the former one contained, whilst an appendix describes the proper places to which 120 others are to be carried. The law imposes on every shipper the duty of putting in a “specification” for each shipment, stating the vessel and country to which she is proceeding, and the number of packages, with their contents in quantity and value. This document must be filed within six days after the sailing of the vessel, by which time also her master or owner is bound to deliver a manifest setting forth the whole contents of her outward cargo. The specification and the manifest being compared together, show that every article

has been properly entered, and the same provisions which secure a correct statement of the various particulars on importation also rule with exporters. These have for many years past furnished all the information procured respecting British goods, and with much greater assurance that the weight and value can be correctly given than in the case of imports ; since these particulars must in all cases be within the knowledge of those by whom the goods are shipped. It is feared, however, that with regard to both, there is less attention paid than there ought to be to full and accurate information being given, and if it seems that in these observations too much space has been given to these small matters, it has been from the conviction that it cannot be too widely known how utterly impossible it is for the department to prepare or furnish correct accounts, if the materials put into its hands for that purpose are not substantially accurate. There has been too much disposition to consider the passing of Customs entries as a mere formality, imposing an impediment to the prompt transaction of commercial business, a disagreeable duty to be got through or slurred over with the greatest ease and rapidity. In many cases, too, there is reason to think that there is an indisposition to make known the full particulars, from a fear that in so doing the nature of operations which it is not desirable, to divulge, may thereby become known to others who are probably rivals in trade. It is to be hoped, however, that a more enlightened spirit will prevail, and that in proportion as the benefits of full information on all points of trade become felt, greater care will be exercised by all with whom it rests to make the trade accounts as perfect as possible. If what has been said on the subject this evening have any effect in helping on so desirable a result, the time and attention given to it will not have been in vain.

IV.—*Nature of Records and Publications.*

If the foregoing remarks have, as it is hoped, fully explained the sources from which statistical information is obtained, they will also have shown the nature of the records kept in the statistical department. Receiving the bills each day, they are at once entered into appropriate registers, which show in detail the trade carried on, both inwards and outwards, at each port in the United Kingdom ; these are ranged under Articles and Countries, and specify in each case the quantity in its appropriate denomination and the value as declared by the parties passing the several entries. By the addition together of the several items and tabulating the totals in proper forms, every description of information, within the range supplied by the first entries, can be obtained at pleasure. Their stated use is to supply the periodical returns to be laid before

Parliament, or published in the "Gazette" for public information, but they are also drawn upon to no small extent for special accounts moved for by members of Parliament, and supplied to the Government, or, by its direction, to various individuals or public bodies making application for them. Records of this nature, more or less fully compiled, are in existence from the year 1696, and every successive year adds to the sum of the knowledge we possess of the history and progress of our national industry and commerce.

The magnitude of this work will appear from the number of documents which have to be dealt with. Those for goods paying duty on arrival or going into the warehouse, many of which contain more than one article, exceed 120,000 annually; those for free goods 230,000; for delivery from the warehouses on payment of duty 1,300,000: for the Exports there are close on 100,000 for dutiable articles, many of them containing six to ten items, and for British goods more than 500,000, averaging five or six articles in each. These have to be distributed over the 135 ports in the United Kingdom, subdivided into the 600 articles contained in the two lists, and the 112 countries.

The regular publications for which the department is responsible are, 1st, a weekly account of corn, inserted in each Tuesday's "London Gazette," containing a statement of all that has been imported or exported up to the preceding Saturday; 2nd, the Monthly returns of trade printed for the House of Commons, and issued on the 7th of each month, containing condensed accounts of the principle articles of imports and exports during the preceding month, and a cumulative account for so many months as have elapsed in the same year, compared with similar periods in the two preceding years; 3rd, Quarterly accounts of the value of merchandise imported, and the British produce and manufactures exported to each foreign country and British possession in the past quarter, and six, nine, or twelve months in each of the three years; and 4th, an Annual Statement of a much more elaborate character, which makes its appearance in the shape of a large quarto volume, after the preceding accounts have been subject to revision and correction.

A variety of tables are also published in the "Statistical Abstract for Fifteen Years," issued annually by the Board of Trade; and much valuable information is given in the Annual Report presented by the Commissioners of Customs.

In using these accounts, it is needful to bear in mind that, for reasons to be presently explained, those for the weekly, monthly, and quarterly periods are all prepared from the importers' entries, and therefore liable to correction; but that the Annual Statement

has bestowed upon it all the care which it is possible to give, and is made as correct in all particulars as it is in the power of the office to make it before publication.

V.—*Alterations in System.*

In the system on which these accounts are prepared, as well as in the form in which they are issued, very great alterations took place at the beginning of last year. Numerous complaints having been made both in Parliament and the public prints, that they were delayed so long as to be practically useless, and that they seldom agreed with the statements put forth by other parties, a Treasury committee was appointed, by whom the whole subject was thoroughly investigated, and on whose recommendation the changes took place. The delay in the production of the monthly account was found to arise from an endeavour to compile it from the landing accounts, which often take six weeks or two months in completion; and the differences between the official and private statements, from the fact that all these landing accounts could not be got in for the proper month, and, therefore, some of them had to stand over till the following one. In reality, the official account was not, nor did it pretend to be, an accurate one for the specific month, but only so far as the examination of the goods had been completed in time for them to be included. The assumption that so much as was left out at one time, would be compensated by an equal quantity on the next occasion, proved utterly fallacious, as was thus represented to the committee:—"If
" this information [the landing officer's account] could in all cases be
" obtained prior to the preparation of the account, it would be, in
" every respect, the most satisfactory source from whence it could be
" supplied, but weeks and months often elapse before it is received.
" In one bundle of bills accidentally taken for inspection, all of which
" were going into the October account, only eight properly belonged
" to that month, whilst there were eight, eight, and ten, belonging to
" June, July, and September respectively. It thus happens that the
" monthly account, as published about the 25th of the succeeding
" month, contains only a portion of the month's imports, with a large
" remanet from the preceding month, and smaller quantities of two,
" three, and four months further back. The weekly account of corn
" is probably two or three weeks out of date. It is true the average
" may be correct, but so great are the fluctuations in the arrivals, that,
" as at present given, the accounts afford no sort of reliable informa-
" tion for the specific period they profess to represent. So serious is
" the divergence from the truth, in the article of tea for instance, that
" the account would often be many millions of pounds out, but that a
" plan has recently been adopted of adding an estimate of the quan-

“tity arrived but not weighed, thus altogether departing from the principle of using only such landing accounts as are made up. In tobacco, wine, brandy, and sugar, it is known that the deficiencies must be quite as large, but no means exist of obtaining estimates.” Would it not be well that these statistics should be divided into two classes? The one possessed of transitory interest, as the guide for present commercial and financial purposes, the other of lasting value as the permanent record of the national trade and progress. For the one (embracing weekly and monthly accounts), early publication is essential, whilst only a proximate accuracy and fullness is required. For the other, that they should be strictly correct and full in detail, whilst sufficient time may be taken in their preparation to ensure these important requisites. What is wanted in the first case, is not a statement of such goods as are actually landed and accounted for, but of such as are really in the country, available for consumption, the subject of bargain and sale, and capable of influencing calculations as to future operations. This information the mercantile world have at present no means of obtaining, except from the circulars of the brokers or others engaged in particular branches of trade, which are only to be relied upon to the extent of the knowledge within reach of their several compilers. To give effect to this view it is proposed that in the first instance the importer’s account of weights, &c., should be taken at once instead of waiting for the landing officer’s return. That from these the records in the registers should be made, reserving an additional column or spare line in which to insert the true quantity when ascertained. These entries would be made from day to day, and at the close of the month adopted for the transitory account. So soon as accurate information can be obtained, a correct total should be made for the annual and permanent one. In this mode the one might be ready in three to five days after the month ends, instead of the 20th or 25th as at present; and for the other we should obtain that which now we *never get*, a really true record of the imports of each respective month.” These representations and suggestions met with approval, and have been carried out since 1st January, 1871. How far the anticipation of approximate accuracy for the prompt account, and of real results for the permanent one, have been realised, will appear from the following table of the weights as given by the importers’ entries, and the actual quantities of the principal dutiable goods imported within the year.

	Importers' Entries.	Actual Quantities.	Percentage of Error.
Cocoa	17,096,729	17,132,236	— 0·21
Coffee	189,977,648	191,907,645	— 1·01
Currants	1,040,619	1,024,946	+ 1·53
Spirits	13,984,412	14,607,514	— 4·27
Sugar	11,086,362	11,232,284	— 1·30
Tea	171,094,275	169,776,576	+ 0·77
Tobacco	72,231,263	76,592,930	— 5·70
Wine	16,605,774	16,821,645	— 1·30
All dutiable articles } together	492,431,233	499,905,922	— 1·50

These articles are selected because, for revenue purposes, they are actually weighed or measured; and there can be no reason for supposing that in those which are not so tested, the importers' entries need be less correct. This change is the basis of the present system, rendering it possible to produce the monthly account sufficiently early to be of material use, and making it a substantially accurate statement of the transactions of the period which it professes to represent.

The other great feature in the altered accounts, which has before been entered upon so fully, is that of substituting a declared for a computed value. There are no means of testing the results of this in the same manner as there are with the weights, and as yet it has not been in operation long enough to affirm with certainty that it may not secure as correct returns as were formerly obtained, although the tendency of many observations is to point in a contrary direction.

Allusion has before been made to the fusion of the two statistical offices into the one present department, and the direct publication of the returns which emanate from it as the means whereby much economy of time and uniformity in practice has been promoted. In addition to this, the practice has been introduced of prolonging the official labours for the three or four first days of the month, to a late hour in the evening, according to a plan for expediting the preparation of the accounts proposed in 1857, but only now carried out. Without this it would be impossible to collect together the innumerable items, the total of which fill two columns in every one of the fifty or sixty pages which make up the monthly issue; and thus secure its early production, without at all interfering with the current work.

Although not exactly appertaining to the object with which this paper has been written, it may be satisfactory shortly to state that these several alterations and improvements have been conjoined with a considerable reduction of the amount formerly expended in

the production of statistics. It is very difficult to estimate how much of the charges for the Customs establishment must be set down to the collection of the revenue, or how much to the multifarious duties, unconnected with the receipt of money, which it has to perform; but an examination of the Estimates for last year, as well as this, in comparison with those for 1870, will show a saving in the Statistical offices alone of some 18,000*l.* per annum, being from a-third to one-half of the previous annual expenditure.

VI.—*Bill of Entry.*

Notwithstanding the length to which this paper has extended, the subject would be left incomplete were no mention made of another branch of statistics relating to trade, which, though springing from an unofficial source, are often confounded with those of official origin, namely, the publication of the Bill of Entry in London and many of the larger ports. These comprise daily lists of ships arriving and sailing, with accounts of their cargoes and other particulars of considerable interest to the trading community, as is evidenced by the large sale of these printed lists. In addition to these, manuscript accounts are rendered on special application. It is not perhaps so generally known as it might be, that for a moderate charge any kind of information that can be gleaned from the Customs records is supplied by this office, and, though not possessing any official authority, it may be relied on as obtained from official sources. The office from which these are issued, though having a local habitation in the Custom House at London, and more or less intimately connected with those at other ports, is not at all under the authority of the Customs department; it is a singular remnant of the old times, when peculiar privileges were conferred on favoured individuals for their pecuniary advantage. One of these acquired, in the year 1660, by letters patent, the exclusive right of access to all official documents connected with the Customs reports and entries, and of obtaining and publishing any portion of the information they contain. This patent has some years yet to run, having been renewed upon satisfactory evidence having been adduced that the work it performs is of public utility, and such as no other machinery is in existence to carry on. It has been proposed for the Government to take over the duties of this office, and to merge them in those of the Statistical Department; but it is at least questionable whether the kind of business it transacts is one which could be managed with the same profit as by private parties, or whether much of it could be efficiently regulated under the system of management necessary for a public office. It is certainly not that which ought to be performed at the public cost, but should,

as it is, be paid for by those for whom it is done. An additional reason for maintaining it on the present footing is to be found in the circumstance that the patent is held by the trustees of the Customs' Benevolent Fund, which is conducted on the principles of a life assurance society for the benefit of the widows and children of Customs Officers. All the profits acquired by the Bill of Entry business go in aid of the premiums paid on life assurance and annuity policies taken up exclusively by members of the Customs department, of whom it cannot be said that they are an overpaid portion of the public service.

VII.—*Conclusion.*

In gathering up the substance of the foregoing somewhat discursive statement, it may be repeated,—

That the object of our system of trade statistics is to keep an accurate record of the trade carried on by each port in the United Kingdom, in every article of import and export; distinguishing that with each foreign country or British possession; and showing the quantity and value of the several goods. To collect their several items into weekly, monthly, quarterly, and yearly totals, tabulated in convenient forms; and to publish these at the respective periods.

That the Board of Trade prescribes the nature and extent of the returns so given, which, under the authority and direction of the Treasury and Board of Customs, are prepared and published. That these returns are condensed and simplified in the number of countries or divisions of countries shown, and in the number of articles specified; it being desired to show distinctly each article of importance by itself, and those not sufficiently important in groups or classes.

That this preparation and publication devolves upon the Statistical Department, which receives, with some few exceptions, daily from every port in the United Kingdom, in original when they can be spared for the purpose, or otherwise in duplicate, the several documents by which the owners of the goods enter and clear them; and from these compiles the records and publishes the returns.

That the several importers and exporters are required, under penalty imposed by Act of Parliament, to supply all the information required in the several particulars of country, goods, quantity, and value.

That the Statistical Department possesses checks for the country, and, to some extent the goods, in the masters' reports of cargo. Upon the quantities or the weights, &c., so far as dutiable goods are concerned, and in a cursory inspection over goods free of duty, taken and exercised by the Customs Officers, upon whom the safety

of the revenue rests. But that for the value, it has no means of ascertaining whether it is correct or not, excepting by a demand for the invoices or other proof, wherever a wide departure from the usual average justifies a call for these documents; and that unless the information furnished as to value is in all, or nearly all, cases so much more precise than could be obtained by any estimate or calculation, all the cost and labour of this method is entirely lost.

That through the alterations recently made in the statistical offices by the union of the two into one, by the simplification of the particulars given and distinctions preserved, by the extension at certain seasons of the hours of attendance for the various employés, and by the direct action of the department, the monthly account has been diminished in bulk, and is now issued on the 7th instead of the 25th of each month, containing all the transactions of the month to which it relates; and that the annual statement can be issued in three, or at most four, months after the termination of the year.

That by these alterations the charge upon the estimates for statistical work is reduced to between two-thirds and one-half of what it formerly was.

From all that has been said, it will be apparent that, with honesty and accuracy on the part of those who provide the information, and fidelity and industry on the part of the Statistical Department, the means exist of supplying full, trustworthy, and complete intelligence of the country's progress in its commercial intercourse with the whole world.

In conclusion allow me to repeat, that in thus bringing these several points to your notice, my object has been twofold; to explain and assist the use of the several statistical publications which are prepared at the expense of the country, and to bring all the influence which it is possible to obtain, to bear upon the accuracy and fulness of the information on which they are founded. If, in so doing, I have failed to collect or impart the statistical facts or results which might have been expected from this paper, the Society may command my services to repair the omission in any way it sees fit to prescribe. If in entering upon so many details, I may be thought to have attached undue value to matters of minor importance, I trust they will not therefore be deemed to be of but little moment. And if in dealing with the subject, I have prolonged these observations to a wearisome length, I trust you will set it down to the enthusiasm of one who has spent the best part of an official life, now long past its meridian; in constant efforts to increase the value, lessen the cost, and improve the character of the various records and publications which make up the sum of our Trade Statistics.

	1851.	1861.	1871.
	£	£	£
Foreign and colonial merchandise imported into United Kingdom	138,624,634*	217,485,024	330,035,143
Ditto ditto re-exported	29,662,020*	34,529,684	Not yet ascertained.
British produce and manufacture exported	74,448,722	125,102,814	222,519,777
Gross amount of Custom duties....	22,064,689	23,657,513	20,534,848
Population of United Kingdom....	27,529,000	28,977,000	31,513,000
Average value of imports per head	£ s. d. 5 - 8	£ s. d. 7 10 2	£ s. d. 10 9 5
„ exports „	2 14 1	4 6 4	7 1 3
Average amount of duty paid per head	- 16 0	- 16 4	- 13 -
“Official value” of imports.....	£ 110,484,997	£ 171,212,549	Not calculated.
Ditto exports of British produce and manufacture	190,652,212	289,355,186	„

* The computed values of imports were not ascertained before 1854. The figures shown above are an estimate founded on the proportion which the real bore to the computed in the first three years of its introduction.

TONNAGE STATISTICS *of the* DECADE 1860-70.*By* JOHN GLOVER, ESQ.

[Read before the Statistical Society, 21st May, 1872.]

ON the 27th June, 1862, I had the honour of submitting to the Statistical Society, an account of the progress of tonnage during the decade 1850-60. The Society's *Journal* for March, 1863, contains that account and the tables by which it was illustrated. In the following paper, I propose to make a similar inquiry as to the progress of tonnage during the decade 1860-70. A special interest attached to the former inquiry, owing to that decade being the first since the repeal of the Navigation Laws. The effects of that measure were looked for with much apprehension. It gave an immense impetus to the production of tonnage in Foreign Countries, and it increased the competition of foreign flags in our trade to the extent of doubling it. The amount was 5,000,000 tons in 1850, and 10,000,000 tons in 1860. Towards the end of that decade, moreover, such depression prevailed amongst all classes of British shipping, that a Parliamentary inquiry was instituted to consider the subject; but it led to nothing. The reimposition of protective differential duties was not more impossible than undesirable, and, as a curative measure, it was certain to be futile. In such circumstances there is one thing which Englishmen are certain not to do, that is, to give up a struggle, the conditions of which appear to be temporarily against them. The increase in foreign tonnage, and the abolition of protective duties were both irrevocable facts, but it was not therefore concluded that the disadvantage was alike irrevocable. The new terms of competition were accepted, and, instead of giving up the struggle for the preponderance in our own carrying trade, our shipowners took fresh steps to deserve it. We did not sell our ships: and close our building yards; but we built more ships, and built them bigger, and finer, and made them in every way more efficient and economical carrying machines, believing that the nation that possessed the best machines would win in the long run.

Before proceeding to consider the tables I have to submit relating to the last decade, it may be convenient to recall some remarkable events which operated very directly on the development of our tonnage during that period.

We had not proceeded far in the decade when the first and most

important of these occurred, viz., the civil war in the United States; an event which produced large and most unforeseen consequences to shipping.

The decision of the Southern Confederacy to issue letters of marque, and so to carry on hostilities at sea, led to the sale of a large number of American merchant vessels. Englishmen were the chief buyers. The completed result of these transactions is marked by one or two facts.

Cargoes were brought to, and carried from, our ports under the American flag in 1860, to the extent of nearly $2\frac{3}{4}$ million tons (2,734,381 tons), but in 1870 the quantity was very little over one million (1,134,215 tons); the decrease between the first and last year of the decade being 1,600,116 tons.

While the American flag so decreased in our ports, British tonnage in the direct trade between the United States and the United Kingdom alone, doubled between 1860 and 1866;—in the former year it was 945,668 tons, in the latter 1,853,145 tons, and it continued to increase after the war was over.

In the same direct trade alone, American tonnage in 1860 attained the unparallelled quantity of 2,245,234 tons; by 1865 it had fallen to less than half a million (484,098 tons).

It seems to be clear, from these facts, that the great bulk of the trade thus lost by the American flag, was gained by ours. Prior to 1860, in the India and China trade, as well as in the direct trade between the United States and the United Kingdom, the American flag had been gaining on ours. The civil war not only stopped, but reversed that process, and gave a great impetus to our flag. From no quarter was such a result less likely when the decade began.

There were other wars during the decade, but only one need be named as affecting shipping, viz., the Abyssinian war. It gave employment in India to ships and steamers, to an extent exceeding 300,000 tons, and at a cost of nearly four millions sterling (3,996,402*l.*). The average period of employment and the average price of hire was, for steamers seven months and twenty-six days at 2*l.* 6*s.* 8*d.*, and for sailing ships, seven months, at 1*l.* 4*s.* 2*d.* The abstraction of this large amount of tonnage from the ordinary channels of trade, made all India and China freight dear for a considerable period, so that, both in its direct and its indirect effects, it was highly advantageous to British shipping.

Next, we note certain changes in the material and in the method of propelling ships, which made their mark on the facts of the decade.

The use of iron instead of wood in the construction of ships, did not originate within the period; but that which had previously been rare became common. The greater strength, and durability, and

capacity of iron vessels became so apparent, that towards the end of the decade, the production of wooden ships had almost ceased. This change from wood to iron was further accelerated by the increased use of steam as the propelling power instead of sails. An iron sailing ship was subject to certain disadvantages, especially that of becoming foul, through long delay on coasts and in calms at sea, which did not affect an iron steamer.

Prior to 1860, the use of steamers had been almost limited to mail and coasting services; for the carrying of grain, and other bulky raw materials, and of iron, and for the carriage of coal, other than coastwise, steamers were scarcely used. But with the use of iron that of steam grew rapidly, and, with its use, constant improvement in marine engines and boilers, reducing the cost of fuel, thereby decreasing the cost of steaming, enlarging the room for freight-paying cargo, and increasing the area in which steamers could be profitably employed. Hence our iron steamer fleet grew yearly during the decade, so that, while we began with 454,327 tons, we finished with 1,112,934 tons, or 144 per cent.

The high significance of these changes will appear when it is recollected that, when ships were built of wood, we had to import the timber from the forests of Canada and Georgia, of Burmah and Oregon. Moreover, we had to import flax from Russia and Poland, and for best cordage we had to seek as far as the Phillipines and the coast of Malabar. Ships built of imported timber, and propelled by sails made of imported flax and cordage, were necessarily dear. Had no change occurred in the materials of which our ships were built, and in the method of propulsion, as well as in the material, cargo-steamers—such as have now become common—would have been impossible. But for the production of an iron steamer we are dependent, not on expensive raw materials imported from foreign countries, but chiefly on our own coal and iron mines and our skilled labour. When improvements in machinery had once made it clear that steamers could carry common cargoes as cheaply as sailing vessels, the disadvantages which had been prevailing against our flag were completely reversed.

Other nations might produce wooden ships cheaper than we could, none could produce an iron steamer so cheap. Hence, from a state of much depression when the decade began, we find at the end not merely increase, but complete recovery of the ground gained by foreign tonnage during the previous decade. When the Navigation Laws were repealed in 1848, the foreign tonnage entered and cleared at our ports with cargo was only 28·8 per cent. against 71·2 per cent. of British. In 1860 foreign tonnage had increased to 41·8 per cent., and British had decreased to 58·2 per cent. But in 1870 foreign tonnage had decreased to nearly its former proportion, viz.,

to 29·82 per cent., and British had risen to 70·18 per cent. So that in our vastly augmented trade our own flag held almost as large a proportion as it ever had held. Moreover, this increase inadequately represents the fact, for besides what we do in our own trade, we have been carrying very largely between foreign countries, especially by steam, and such operations make no mark on our national returns.

Our greatly increased trade must also be mentioned as leading to the revival of the British shipping interest, for it is obvious, that the other facts alluded to could have produced that result in a very inferior, if not in a merely temporary degree, but for the expansion in British trade. That grows apace, and with such exuberant vitality that the most adverse circumstances seem to produce a very temporary check. What happened within the decade under the Limited Liability Act is too recent, and was too disastrous to require to be recalled, but the trade records of the completed period show little trace of it. In 1860 our exports and imports attained the value of 375,000,000*l.*, in 1870 they had grown to 547,000,000*l.*, an increase of 43 per cent.; and if we further inquire, as more directly showing its effect on tonnage, what was the increase in certain very bulky articles of commerce employing large quantities of tonnage, the following table shows it:—

TABLE I.—*Showing the Quantities of certain Articles Exported and Imported in 1860 and 1870.*

	1860.	1870.
EXPORTS.		
Coal.....tons	7,321,832	11,495,092
Iron and steel..... „	1,442,045	2,716,455
IMPORTS.		
Corn .....cwts.	52,000,000	70,000,000
Rice..... „	1,535,575	4,077,548
Wool lbs.	148,000,000	263,000,000
Wood .....loads	2,727,000	4,094,000
Sugar .....cwts.	8,817,277	12,798,631
Wine .....galls.	148,000,000	263,000,000
Spirits..... „	11,000,000	17,000,000
Pyrites .....tons	93,889	411,512
Guano „	141,435	280,311
Petroleum .....galls.	490	6,859,385

This vast expansion of trade, of which the figures in Table I afford only a sample, operated in combination with the other circumstances I have named. The American civil war aided in its adverse effects by a protective tariff; the Abyssinian war; the extended use of iron in shipbuilding, and of steam as a propelling

power, were the chief causes which changed the adversity in which the decade began into the prosperity with which it closed.

These general observations regarding the chief facts of the decade will, I think, be sustained by the tables to which I now invite the Society's attention:—

TABLE II.—*Showing the Total Entries and Clearances at Ports in the United Kingdom in the Years 1850, 1860, and 1870.*

Year.	Tons.	Increase.	Increase per Cent.
1850.....	39,634,326	—	—
'60.....	58,707,102	19,072,776	48·12
'70.....	73,198,124	14,491,022	24·68

The above table includes entries and clearances coastwise (the latter for 1850 are estimated). In my former paper on this subject, the similar table did not include the clearances coastwise. It will be observed that the large increase on the previous decade is not only sustained, but that the increase thereon is nearly 14½ millions.

TABLE III.—*Showing the Total Tonnage Entered and Cleared at Ports in the United Kingdom, in the Foreign Trade only, in 1850, 1860, and 1870.*

Year.	Tons.	Increase.	Increase per Cent.
1850.....	14,505,064	—	—
'60.....	24,689,292	10,184,228	70·21
'70.....	36,640,182	11,950,890	48·40
The increase between 1840-50 was			53·67
,, '30-40 ,,			62·76
,, '20-30 ,,			9·89

It will be observed that the increase on the last decade is nearly 12,000,000 tons against an increase of rather more than 10,000,000 tons between 1850 and 1860. Considering that Table II shows the total increase during the decade to have been under 14½ millions, it is astonishing to find that of this increase no less than nearly 12,000,000 is in clearances to and from foreign ports. There is a still more satisfactory fact regarding the foreign trade, which appears in Table IV.

TABLE IV.—*Showing the Tonnage Entered and Cleared in the Foreign Trade, with Cargoes only, in 1850, 1860, and 1870.*

Year.	Tons.	Increase.	Increase per Cent.
1850.....	12,020,674	—	—
'60.....	20,837,918	8,817,244	73·35
'70.....	31,624,680	10,786,680	51·76

While the total increase in foreign entries and clearances during the decade was 48·40 per cent., that with cargoes only was 51·76 per cent. It will also be observed that, although the increase per cent. is less than on the previous decade, the absolute increase exceeded that of the former decade by nearly two million tons, viz., 10,786,680 against 8,817,244 tons. Large, however, as this increase is shown to be by Tables III and IV, the whole is not represented, as our shipping is most extensively employed in carrying goods from foreign producing countries direct to other foreign countries where they are consumed; as, for instance, tea from China to America; jute and seeds from India to America; cotton from both India and America to Russia and other European States; oil seeds from India to France; and, in enormous quantities, wheat, rye, oats, and other grain from both Northern and Southern Russia, Sweden, the United States, and Canada, to the European ports lying between Havre and Hamburg. These operations make no mark on our returns, but they must be borne in mind in any estimate of our foreign trade.

The increase in the coasting trade of the United Kingdom appears in—

TABLE V.—*Showing the Total Tonnage Entered and Cleared Coastwise.*

Years.	Tons.	Increase.	Increase per Cent.
1850.....	25,129,262	—	—
'60.....	34,017,810	8,888,548	35·37
'70.....	36,558,042	2,540,232	7·47

By this table it will be observed that the entries and clearances coastwise in 1870 are almost identical with those in the foreign trade only, viz., about $36\frac{1}{2}$ millions each. This is quite a novel feature in our returns. In 1860, we had 34 millions of tons coastwise against $24\frac{1}{2}$ millions in the foreign trade, and in 1850,

25 millions against $14\frac{1}{2}$ millions. Table V shows that the coasting trade has not decreased, but the rate of 7·47 per cent. in 1870 over 1860, compared with 35·37 per cent. in 1860 over 1850, is highly significant of the extent to which railways compete with ships and steamers in the carriage of goods from one part of the United Kingdom to another.

Having shown the increase in tonnage of all kinds during the decade, I next inquire the proportions of British and Foreign tonnage respectively.

TABLE VI.—*Showing the Amount of British Tonnage Entered and Cleared, with Cargoes only and in Ballast.*

Years.	With Cargoes only.			With Cargoes and Ballast.		
	Tons.	Increase.	Increase per Cent.	Tons.	Increase.	Increase per Cent.
1850....	8,039,308	—	—	9,442,544	—	—
'60....	12,119,454	4,080,146	50·75	13,914,923	4,472,379	47·36
'70....	22,243,039	10,123,585	83·52	25,072,180	11,157,257	80·18

TABLE VII.—*Showing the Amount of Foreign Tonnage Entered and Cleared, with Cargoes only and in Ballast.*

Year.	With Cargoes only.			With Cargoes and Ballast.			Pro- portion to Total Tonnage Entered and Cleared.	Pro- portion to British.
	Tons.	Increase.	Increase per Cent.	Tons.	Increase.	Increase per Cent.		
1850	3,981,366	—	—	5,062,520	—	—	34·89	53·61
'60	8,718,464	4,737,098	118·99	10,774,369	5,711,849	112·82	43·63	79·58
'70	9,381,641	663,177	7·6	11,568,002	793,633	7·36	31·57	46·13

By Table VI it appears that the entries and clearances with cargo, under the British flag, rose from 12,000,000 to 22,000,000. The remarkable character of this figure will be more apparent when it is recollected that the total increase of such entries and clearances under all flags between 1860 and 1870 was under eleven millions, or, in other words, the whole increase was 10,786,680 tons, and of that there was under the British flag 10,123,585 tons—nearly the whole increase, therefore, was British.

Table VII explains the fact. Though the general increase was

51·76 per cent., as just stated, the foreign increase was only 7·36 per cent. The contrast of the relative position of British and Foreign tonnage at the beginning and end of the decade, is, therefore, very remarkable.

In 1860 the foreign gain marked on the decade then ended was 118·99 per cent.; in 1870 it was only 7·6 per cent. In 1860 the British gain was 50·75 per cent.; in 1870, 83·52 per cent.

From the last columns in Table VII, it is further apparent that the great impetus which the abolition of the navigation laws gave to foreign tonnage, culminated in the decade which followed the repeal.

The proportion to total entries and clearances of 34·89 per cent. of 1850, grew to 43·63 in 1860, but by 1870 it had declined again to 31·57—less than in 1850, near indeed to the proportion of 1840, which was 31·24.

So the proportion to British, 53·61 in 1850, grew to 79·58 in 1860, but had fallen to 46·13 per cent. in 1870—considerably less than the proportion of 1850.

The relative position of different foreign flags in our trade appears by—

TABLE VIII.—*Showing the Tonnage of several Nationalities, Entered and Cleared with Cargoes only, in 1860 and 1870.*

Nationality of Vessel.	Tonnage Entered and Cleared.		Increase.	Increase per Cent.
	1860.	1870.		
Russian	242,673	538,443	295,770	121·0
Swedish	366,700	591,985	225,245	61·0
Norwegian	948,212	1,975,575	1,027,363	108·0
Danish	618,681	623,798	5,117	0·8
French	616,410	785,658	169,248	0·27
Belgian	112,537	305,384	192,847	171·0
Spanish	128,181	293,800	165,619	128·0
Austrian	316,511	356,701	40,190	0·12
Italian	275,688	811,903	536,215	0·194

The following flags show a decrease:—

Nationality of Vessel.	Tonnage Entered and Cleared.		Decrease.	Decrease per Cent.
	1860.	1870.		
United States.....	2,734,381	1,134,215	1,600,166	58·0
German	1,797,747	1,433,595	364,152	22·0
Dutch	445,556	436,214	9,342	2·0
Portuguese	66,599	45,975	20,624	30·0

Two remarkable figures of increase must be noted in Table VIII. That of the Norwegian flag is more than a million in the decade, that of the Italian more than half-a-million. A still more remarkable decrease is that under the American flag—more than $1\frac{1}{2}$ million, as the result of circumstances to which allusion has already been made in the earlier portion of this paper.

The remarkable increase, both in the absolute and relative quantity of British tonnage, is chiefly due to the increase in steamers, as will appear from—

TABLE IX.—*Showing the Total Tonnage of Steamers, Entered and Cleared at Ports in the United Kingdom, from and to Foreign Countries and British Possessions, and the Proportion of the same under Foreign Flags.*

Year.	Total Steam Tonnage.	Increase per Cent.	Of which Foreign.	Increase per Cent.	Proportion of Foreign to Total.	Proportion of British to Total.
1850....	2,209,847	—	406,892	—	18·37	81·63
'60....	4,967,473	124	780,853	92	15·73	84·27
'70....	15,072,331	203	1,731,273	121	11·49	88·51

The entries and clearances of steamers in the foreign trade in 1860 were under 5 million tons, in 1870 they were over 15 million tons: they more than trebled during the decade. In 1860 the entries and clearances of sailing ships in the foreign trade were nearly 20 million tons against 5 millions of steam, but in 1870 the sailing entries and clearances had grown only to $21\frac{1}{2}$ millions, whereas those of steam had become 15 millions, as just stated. The latter had trebled, while the former had increased only $7\frac{1}{2}$ per cent. during the decade. Of the above-named 15 millions of steam tonnage, nearly $13\frac{1}{2}$ millions was under the British flag. The position of steamers in our whole trade may be briefly summed up thus. In 1870 we entered and cleared 73 million tons, of which 36 millions was steamers and 37 millions sailing vessels. Of the 36 millions, 2 millions were foreign steamers; of the 37 millions, 10 millions were foreign sailing vessels.

Having now shown the general increase in our carrying trade, and the improved relative place which our own flag has established therein, we proceed to make more minute inquiries regarding British tonnage; and first as to the extent of our registered tonnage. This will appear by—

TABLE X.—*Showing the Number of Vessels, their Average Size, and Total Registered Tonnage of the United Kingdom and Channel Islands; also the Increase thereof, and the Degree of Activity in 1850, 1860, and 1870.*

Year.	Number of Vessels Registered.	Average Size.	Total Tons.	Increase per Cent. in Total Tonnage.	Degree of Activity.
1850	25,138	139	3,504,944	28·66	2·69
'60	27,663	168	4,658,687	32·63	2·98
'70	26,367	215	5,690,789	22·15	4·40

Note.—The new mode of measuring ships, which came into operation in 1855, had the effect of making the increase in registered tonnage about 10 per cent. less than the ships since added to the register would have made it, had the former regulations for measurement continued in force.

Our fleet consisted of 1,296 fewer vessels in 1870 than in 1860, but their average size had increased from 168 tons to 215 tons, so that although we had fewer ships, we had one million more tons of shipping when the decade ended than when it began—5,690,789 against 4,658,687 tons—an increase of 22·15 per cent. The last column in Table X marks the increased activity of our tonnage. It does more work than formerly, stops less frequently, enters and clears more frequently. We have fewer ships, but we work them harder, and do much more work with them: how much more is indicated by the rise from 2·98 to 4·40—an increase of 47·65 per cent.—in what I have ventured to call the degree of activity.

Steamers furnish the chief explanation of this fact, as of so many other items of increase which this paper chronicles: this will more conclusively appear to be the case from the consideration of—

TABLE XI.—*Showing the Number, Average Size, and Total Registered Tonnage of Steam Vessels in 1860 and 1870, with their Degree of Activity.*

Year.	Number.	Average Size.	Tons.	Increase per Cent. in Tonnage.	Degree of Activity.
1860	2,000	227	454,327	—	10·93
'70	3,178	350	1,112,934	144	13·55

From Table XI it appears that while the number of steamers did not increase much above 50 per cent., the increase in average size was so large, from 227 tons to 350 tons, that the increase in tonnage was no less than 144 per cent. The degree of activity in Table XI shows the immense work done by steamers, compared with sailing vessels. They affect the ratio in Table X as they are included in it, but the maximum activity there is represented by 4·40, whereas in Table XI, with steamers only, it is 13·55. The rise from 10·93 in

1860 to 13·55 in 1870, or 23·97 per cent., is in itself important. It shows that steamers are being better handled, and more quickly loaded and unloaded.

By Table XII the distribution of our fleet is shown between home and foreign trade, also the number of men employed and the number of men per 100 tons.

TABLE XII.—Showing the Number and Tonnage of Sailing and Steam Vessels Employed in the Home and Foreign Trade, with their Average Size and the Number of Men Employed.

	Sailing Vessels.				
	Number of Vessels.	Tons.	Average Tonnage.	Men Employed.	Number of Men to each 100 Tons.
<i>Home Trade—</i>					
1860.....	10,848	821,079	75	39,163	4·7
'70.....	11,598	766,742	66	40,265	5·0
	750 Increase	54,337 Decrease	9 Decrease	1,102 Increase	0·3 Increase
Ditto, per cent.	6·9	6·6	12·0	2·8	6·3
<i>Foreign Trade—</i>					
1860.....	6,876	2,804,610	407	97,624	3·4
'70.....	6,757	3,468,717	513	96,954	2·7
Increase	—	664,107	106	—	—
Decrease	119	—	—	670	0·7
Per cent.	1·7	23·6	26·0	0·06	20·5
	Steam Vessels.				
	Number of Vessels.	Tons.	Average Tonnage.	Men Employed.	Number of Men to each 100 Tons.
<i>Home Trade—</i>					
1860.....	402	92,254	229	6,416	6·9
'70.....	1,071	170,746	159	11,445	6·7
	669 Increase	78,492 Increase	70 Decrease	5,029 Increase	0·2 Decrease
Ditto, per cent.	166·0	85·0	30·0	78·0	2·7
<i>Foreign Trade—</i>					
1860.....	447	277,437	620	17,958	6·4
'70.....	935	760,410	813	33,089	4·3
Increase	488	482,973	193	15,131	—
Decrease	—	—	—	—	2·1
Per cent.	109·0	174·0	31·0	84·0	32·8

Some curious results appear in Table XII. In the home trade, the number of sailing vessels increased, but the average size shows a decrease of 12 per cent., and the tonnage actually employed is 54,337 tons less on the decade. Yet with this decreased tonnage, 1,102 additional men are employed, and the ratio of men per 100 tons, had risen from 4·7 to 5·0, or 6·3 per cent.

In the foreign trade these facts are exactly reversed: the number of ships is reduced, but the tonnage is increased 664,107 tons, and the average size from 407 tons to 506 tons; it is more satisfactory to observe that this large increase both in tonnage and size is worked without any increase of men—a slight reduction in fact. The proportion of men to the 100 tons, fell from 3·4 to 2·7, a reduction of more than 20·5 per cent., apparently indicating great economical improvements in our sailing fleet.

The figures of Table XII regarding steamers require little comment. They are increasing in number in both the home and foreign trades, but the average size in the home trade shows a considerable reduction. In the foreign trade, the increase of 31 per cent. in average size, is most satisfactory, as also the reduction in the number of men per 100 tons, viz., from 6·4 to 4·3, or 32·8 per cent.

In drawing these observations to a close, I submit, that the figures exhibited show this great branch of our national industry to be in a very satisfactory position; whether in regard to the increase of our carrying trade altogether, and to the increased participation of our own flag therein; or to the particular condition of our own shipping, especially its growth in size, and its management with a reduced proportion of labour; or whether we regard the increasing use of steamers, and our advantages for their production, the indications on all points are those of health and growth. Iron and coal have enabled us to recover our place as the greatest among the maritime carriers; and it may perhaps be said, without boasting too much, that our engineers and shipbuilders have made such splendid use of these two minerals in the production of carrying machines, as to deserve the pre-eminence which our flag has won. We owe nothing to protective duties, nothing to friendly tariffs, to favoured-nation clauses, &c. We have the best carrying machines, and therefore can carry cheaper and faster than any other flag. For some time past French and German steamers have been competing with us in the Atlantic trade, but they are nearly all British-built steamers, though sailing under foreign flags. So far, indeed, we have had no serious competitors in the production of steamers. They have been cheaper to buy here than anywhere. These facts seem to justify the hope that, in the steam epoch now just fairly inaugurated, we may be able to keep the advantage with which we

start, only, of course, by continuing to deserve it; and this confidence is not lessened by the recollection that its foundations lie materially as deep as our coal and iron strata, and intellectually on the genius and perseverance of our engineers.

There are, however, many apprehensions of disaster from the development of steam tonnage during the last two years. It is quite possible, nay probable, that production has exceeded the possibility of profitable use. The almost entire cessation in the production of sailing vessels, and the increased proportion of our own trade done by our flag, shows that the facts justified a large increase in steamers. Excess beyond this will cure itself.

I have said nothing as to the relation of shipping to the law. For several Sessions past we have been expecting the enactment of a code consisting of somewhere about 800 clauses for our guidance and control; and, no doubt, ere long, some such measure will pass. It will neither do very much harm, nor very much good. To carry on a business within the meshes of six or eight hundred clauses of an Act of Parliament, is simply impossible,—the inevitable consequences are evasion, coach-and-six driving, and the appointment of numberless inspectors and surveyors of all small kinds, and increased public delusion regarding parliamentary securities. In all such matters Parliament would achieve much more if it attempted much less. So much of the letter of this law “killeth,” and inevitably begets that keeping to the ear and breaking to the heart which all over-legislation secures as its chief result. I have, therefore, only to express my hope on this point, that an enlightened confidence may dictate the decisions of our Legislature when it deals with this important subject. No doubt the public interest is paramount in all such decisions, but it is pretty certain that that is promoted rather by the minimum than by the maximum of State interference. Now and then sensational letters in the newspapers allege all sorts of things against ships and shipowners, but the short and exhaustive answer is this—the insurance premiums on sea risks have been declining for a long period, and out of the reduced premiums, the insurance companies pay large dividends. The inference is irresistible, carriage by sea must be increasingly safe—and if this fact be once admitted, it seems to indicate that the Government would do well to leave this great trade with a less amount of special legislation in the presumed interest of the public, for that is more effectually secured by healthy competition than by the factitious securities provided by Act of Parliament.

MISCELLANEA.

CONTENTS :

	PAGE		PAGE
I.—The Rise in Prices	231	III.—Synopsis of the International Congress, with Names of Delegates	238
II.—Women's Wages in the United States	236	IV.—The Consumption of Tea	243

I.—*The Rise in Prices.*

THE following very interesting contribution to the recent history of prices, has been taken from the *Birmingham Daily Post* of the 18th June:—

“ In another column we give some illustrations of the rise which has lately taken place in the prices of commodities and manufactured goods. It may be interesting to offer, or at least to attempt, an explanation of the causes of this rise, which attracts general attention, disturbs the operations of commerce, and pinches every householder. Whence comes the rise? If the question were a new one, there would be more difficulty in answering it. But any old man may remember at least six similar kinds of inflation, followed by disastrous collapse; we mean those periods ending in 1816, 1825, 1836, 1845 to 1847, 1857, and 1866. Most of these crises were about ten years distant from the one before; and this uniformity in so many instances, indicates a law—if we could only find it. These vicissitudes, however, were common long before 1816. There were, a hundred and fifty years ago, the French Mississippi scheme and the English South Sea scheme; there was a great disturbance in 1772, allayed, unless our memory deceives us, by a large issue of Exchequer bills; there were various panics during the war in 1793 and 1797 (when the Bank of England suspended payment), and again in 1810. The irregular and spasmodic effects of war naturally produce such movements, and the intervals of quietness were inevitably of varying length. At present, only six years have elapsed since Black Friday; and if there were an immutable law that nine or ten years are necessary to evolve a panic, we shall still have three years of smooth water before us. But under railroads and telegraphs everything gets to a higher speed, and who shall say whether seven years may take the place of ten? It must be noticed also, that, besides the six dramatic years engraved on our memories, there have been several minor and less tragic periods, when commerce has been suddenly pulled up, but with less fatal effects. One of these minor checks may be at hand.

“ If we could but make out the causes of the vicissitudes, we could predict their recurrence with more certainty, and could more easily propose remedies. One cause, no doubt, is the accumulation of capital wanting a field for employment. To believe some writers on social science, we are a profuse people, bent on the enjoyment of the hour, and careless of the future. It is in vain to tell such grumblers of all the benefit societies, the members of which are so numerous that there are a dozen to every twenty houses, or more than one to every two houses. It is also in vain to add that the annual savings of all classes together are so great that in six years they are enough to pay off the 800,000,000*l.* of the national debt. It is

this vast saving which is one cause of our difficulties. In the flush of imagined prosperity, indeed, men launch out into undue expense; but a panic comes, and horses are sold, and servants dismissed, and pictures are unsaleable in the city. Then follows a reign of frugality, and gradually there arises the old difficulty of finding investments for the stock thus saved. It was the same in frugal Holland in the time of Sir William Temple, who saw the Dutchmen with tears in their eyes when their Government repaid certain sums it had borrowed.

“ But beside this material cause, there is another in the sentiments and fancies of men. After the Overend and Gurney failure, and the tumble of other card-built castles of overgrown children, speculators were turned into cowards. Some have never recovered from the shock, and are found with all their means invested in consols and mortgages at 4 per cent. More sanguine minds have regained their tone, and play a little at the Stock Exchange. Six years, too, have produced a new crop of men, who have no experience of Black Friday, and who, puffed up with a little success, or rashly trusting to their luck, rush into time bargains, where one must lose as much as another wins, and where the only gainers are the stockbrokers, who get their commissions whatever happens. Then, again, appear the promoters of joint stock companies, one of whom is said to have boasted that he had got 50,000*l.* by forming companies, and intended to get as much by winding them up again. Thus inflation and collapse follow each other as naturally as light and darkness. A curious illustration of the sobering effects of commercial reverses was found in Paris some years ago. During the reign of Louis Phillipe there was a great extension in Paris of commerce and adventure, and the success and security enjoyed tempted merchants and speculators to hoist all their sails, even to the skyscrapers. There came unexpectedly the storm of reform banquets forbidden, excitement among the people, abdication of the king, a republican Government, necessarily accompanied by a commercial crash and universal distrust. Our decennial panics are nothing when compared with such a revulsion as this. Look at the result on the minds of men. For years afterwards, if you asked a French merchant to embark on an undertaking of any hazard, and requiring time to mature it, he thanked you coldly, and said he remembered '48. Under the Second Empire, it is true, a new crop of men, patronised and urged by the Court, outdid the speculators of the more sober Orleans dynasty. But it is a curious fact that interest in 1866 was in Paris as low as $3\frac{1}{2}$ per cent., while in London it was 10 per cent., and remained at that extraordinary height for fourteen weeks.

“ There remains another question—one, in the eyes of many persons, paramount and overshadowing all others: How far is our present condition of inflation owing to the gold discoveries? It might be sufficient to reply that the present condition of trade so much resembles that of the previous periods we have mentioned, that the old causes might account for what is now happening. In 1825, 1836, 1847, there was not a whisper of gold finding, but prices rose madly. It may be replied that at each of those periods there was some special cause: in 1825, the opening of South American markets and visions of an El Dorado; in 1847, the rapid construction of railroads and prospects of illimitable premiums on shares. Many persons believe with David Hume, that if some morning everyone awoke with two guineas in the place of each one he left in his purse overnight, prices of commodities would necessarily double themselves. Hume, however, in another essay, concedes that time is necessary to effect this process, and he shows how much less effect was produced by the discovery of America than might have been expected. We have seen of late years what large amounts of gold and silver may lie idle in the hands

of bankers, producing no immediate change in prices. Formerly, if the Bank of England had 10,000,000*l.* to 15,000,000*l.*, and the Bank of France as much, we felt satisfied. But before the war broke out in 1870, these two great banks, instead of 30,000,000*l.* between them, had 70,000,000*l.* It is curious to remember how frightened economists once were. For some years before the great gold discoveries, there had been an additional supply coming from the Oural mountains; and these annual two or three millions caused serious alarm to writers on prices. For the last twenty years we have received annually 10,000,000*l.* or 12,000,000*l.* from the Pacific and the South Seas, but the world has not been greatly disturbed. To aggravate the danger, many States, and especially France and the United States, are using a paper currency, setting free more of the precious metals. Before that happened, however, great quantities of the gold had been absorbed by taking the place of silver in the currencies of both those countries, the liberated silver finding its way to Eastern Asia.

“On the whole, what shall we say as to the action of the Californian and Australian gold? We cannot affirm that it necessarily and at once raised prices of commodities, since we see that at first it accumulated in the banks instead of getting into circulation. Our theory is this: there are from time to time causes tending to raise prices. These causes are counteracted or modified by other causes, of which one of the most effective is a restricted currency. If wages and prices, under a flush of prosperity, rose by one-fourth, each of us would have to keep in his purse one-fourth more coin; each manufacturer and farmer would require one-fourth more coin on Saturdays for paying his wages. This increase of demand for gold and silver at once lessens the reserves of all the banks; interest rises, and bank accommodation is reduced. But now that the commercial world is saturated with gold, those restrictions are not felt so soon: prices may go on rising for a longer time. The restriction will come at last, but it is longer in coming. The necessity for circulating medium is a bond which formerly was early felt. The increased quantity of gold has enlarged that bond and made it more elastic. We hold that an addition to the precious metals of the world does not directly act on prices, but is a condition without which prices cannot rise much beyond their old level.

“One most important question remains: Will prices, when the next revulsion comes, recede to their former state? Of course they will recede more or less; but if our reasoning be sound, their subsidence will be only partial, and they will permanently remain on a higher level than before. Our conception of the whole matter is this: after a crisis such as that of 1866 comes a calm. Men retrench their expenditure, and avoid hazardous investments. Money, therefore, accumulates fast. In four or five years traders find themselves wishing for markets to take off their superfluous goods and raw produce. At the same time men have been recovering their courage, shaken for a time by the last panic. Then comes the recurrence of speculation, demand for goods, rising prices, higher wages. This is our present condition. The only circumstance that distinguishes it from 1825 or 1836, is the abundance of gold at present. In other cases of inflation, the rise of prices and the increase of transactions have soon caused a scarcity of gold and silver for circulation; at present, the larger quantities of these metals existing unemployed remove this limit to a greater distance. Thus prices may rise far higher than before, taking all commodities together.”

“Although the extraordinary revival of trade which set in last autumn, after nearly five years of more or less marked depression, has evidently not yet reached

its limit, and prices in all departments of production are still rising with the cost of labour and material, it may be interesting, before the turn of another half-year, to review the progress already established in prices, more especially in the staple products of this district. Scarcely nine months have elapsed since the upward movement began here, with an advance of 10s. per ton in iron; but it was not until the close of the year that the combined effects of diminished hours of labour, increased wages, and speculation in the copper trade gave the first great impetus to prices. For the purposes of comparison, however, we have thought it well to go back to the beginning of the advances in September last, and to show the percentage of increase in each case on the prices then ruling. The calculations, it should be premised, are based on the wholesale prices quoted by manufacturers and factors, and in several instances where quotations vary in the same trade, or differ for different sizes and patterns of the same articles, they must be regarded as only approximate. In regard to the articles enumerated, as it would have been obviously impossible within our limits to quote the price lists of every description of goods manufactured even in this locality, we have confined the comparison to productions either in specially large request, or of a representative character. The list is doubtless incomplete, but it will serve to convey, at all events, a general idea of the advance which has taken place in hardwares, and consequently of the diminished purchasing power of money in respect to those goods. At some future time we may extend the investigation so as to embrace not only other classes of manufactures, but food staples, wages, and every kind of commodity which contributes to fix the value of money.

“Strict classification of the various articles embraced in this retrospect is scarcely possible or necessary, but it may simplify our comparison to divide it into two heads—raw and manufactured goods. Under the first may be classed metals, metallic compounds, and fuel, the relative prices of which in September of last year, and at this present moment, are set out in the two first columns below. In the third column is shown the approximate percentage of increase represented by the higher prices upon those quoted in the first column of the table:—

		September, 1871.		June, 1872.	Percentage of Increase.
		£ s. d.		£ s. d.	
Iron bars.....	per ton	8 10 —		13 — —	53
Copper.....	„	76 — —		116 — —	53
„ sheets.....	per cwt.	4 1 —		6 1 —	50
Yellow metal sheathing.....	per lb.	— — 7½		— — 10¼	37
Tin	per ton	137 — —		153 — —	12
„ plates	per box	1 11 —		2 6 —	48
Spelter	per ton	19 — —		22 7 6	18
Lead	„	18 10 —		20 — —	8
Nickel	per lb.	— 4 3		— 6 —	41
Yellow metal	„	— — 6½		— — 10	54
Regulus of antimony.....	per ton	48 — —		80 — —	67
Brass (ingots).....	„	53 — —		81 — —	53
„ sheets	per lb.	— — 8½		— 1 —	41
Coal.....	per ton	— 11 —		— 14 —	27
Rough slack	„	— 4 6		— 6 —	33

“We have taken common marked bars as the standard of iron in deference to general usage, but the advance has been much more marked in sheets and plates.

The quotations for coal and slack are those of the Cannock Chase Company, which have fluctuated less, perhaps, than those of any description of coal consumed in this district. Regulus of antimony, we may remark, is the principal ingredient in the compound known as Britannia metal, as nickel is in German-silver.

“ In the following list of general hardwares, the figures quoted, unless otherwise expressed, refer to the discounts from the price lists, and the percentage of increase is calculated upon the net prices :—

	September, 1871.	June, 1872.	Percentage of Net Advance.
			Per cent.
Iron gas tube per cent.	70	35	117
Brass-cased tubes ”	57½	42½	38
Tinned hollow-ware ”	55	40	33
Enamelled „ ”	32½	22½	15
Ironwood screws ”	60	40	50
Light edge tools..... ”	45	37½	14
Galvanised buckets per doz.	8s.	11s. 4d.	42
Japanned goods per cent.	27½	5	31
Chains per cwt.	18s. 3d.	28s. 4d.	55
Anvils ”	26s.	33s.	2
Steel toys, best per cent.	30	25	7
„ second quality ”	45	35	18
Best spades and shovels ”	42½	25	30
Wrought nails —	—	—	50
Cut nails per cwt.	9s. 9d.	19s.	95
Malleable cast iron nails ”	17s.	22s.	29
Cast iron wall and lath nails.... ”	8s.	11s. 6d.	44
Sad irons..... ”	8s.	11s. 6d.	44
Improved chest handles per cent.	77½	70	33
Bellows, bastard ”	65	55	29
Extra nailed „ ”	60	50	25
Bristol „ ”	55	45	22
Brassfoundry ”	50	35	30
Frying pans ”	70	50	67
Coffin furniture, common ”	70	65	17
„ registered ”	30	25	7
Cut tacks ”	80	70	50
Iron locks ”	—	—	25
Wrought hinges..... ”	62½	50	33
Shoe tips..... —	—	—	30
Currycombs —	—	—	25
Fire irons..... —	—	—	25
Cast iron fenders —	—	—	25
Box irons per cent.	57½	50	18
Iron bedsteads —	—	—	30
Planes per cent.	50	40	20
Paraffin lamps..... —	—	—	10
Gas fittings..... per cent.	27½	15	about 17
Washers ”	75	50	100
Brass loco tubes per lb.	8½d.	1s. -¼d.	44
„ tubes ”	10½d.	1s. 2d.	33
„ wire ”	8d.	-s. 11½d.	44
Copper „ ”	10½d.	1s. 3d.	43

“ It will be seen from the foregoing that the average advance on hardwares has been not far short of 50 per cent. in the nine months, or in other words that 30s. now is not worth much more than 20s. in September last, so far as concerns its purchasing power in the staple productions of this locality. The advances are certainly justified by the rises in fuel and raw material, as shown in the first table, to say nothing of increased wages; but this fact in no way diminishes their unpleasant significance for the large number of professional men, tradespeople, and commercial employés, who have had to make ends meet on a fixed income.”

II.—*Women's Wages in the United States.*

FROM the *Manchester Guardian*:—

“ An interesting report by the *Labour Bureau* of Massachusetts contains an exposition of the conditions under which women are employed in the great towns in that State, from which we extract what follows:—

“ Domestic service is first considered, and is thus summarised:—Average wages per week with board: cooks, \$8.85; chambermaids, \$4.54; kitchen girls, \$2.98; table girls, \$4.74; average hours of labour per week, 66; general average earnings per year, \$274.56.

“ The little cash girls have a hard time of it, and they receive small pay for their menial service. In the large stores in Boston, for instance, these cash or errand girls haven't five minutes' leisure at a time. In fancy goods stores they are sometimes placed at a counter where small wares are for sale. It is the practice among some shopkeepers to deduct from the pay of these girls the price of any article they may break, and the result is that, when Saturday night comes, the poor things have hardly any money to carry home. The articles generally are fragile in their get-up, and are susceptible of being broken by almost winking at them. In one particular instance, the mother of one of these children applied to the keeper of a store for relief, but he said it was his custom, although the child had succeeded in selling the injured article at the full price; the shopkeeper thus defrauding the girl and getting a larger amount than he otherwise would have obtained for the toy. These cash girls are paid from \$1.50 to \$2 per week for running their little legs almost off in response to the frantic cry of 'cash.' In this connection the commissioners say they found large numbers of children employed in city stores, manufactories, offices, &c., who attend no school the year through. Our figures, derived from data given under oath to the State Board of Education for the year ending 1st April, 1871, put the non-attendants at over 9,000, or 20 per cent. out of a child-population of 46,300, between 5 and 15 years of age, in Boston. The parents plead necessity and the unavoidable pressure of poverty for putting their children to work at the earliest age at which employers will take them.

“ Here is a list of the average earnings of persons following various vocations, and the only wonder is how they are enabled to keep body and soul together. The figures, too, fail to give a correct idea of their true condition. Makers of bed-clothing: average earnings per year, \$103; average hours of labour per week, 60; number of weeks of busy season, 24; price of board per week, \$4.50. Bugle trimming: average wages per week, \$4.36; hours of labour per week, 60; number of weeks of busy season, 20; price of board, \$4.50; general average earnings per year, 87.20. This is at wholesale. Those who work in the retail trade earn only \$76 per year, the number of weeks of busy season being only 16. Caps and silk hats: the wages in custom establishments sometimes reach as high as \$12 or \$15 per week. The busy season lasts 24 weeks. Upon inquiry, 24 persons received \$10 per week; 46, \$9 per week; 53, \$8 per week; 47, \$7 per week;

64, \$4.50; 125, \$3. The lowest wages are paid to learners. These people, of course, live from hand to mouth, and hardly that. Their rooms, with few exceptions, are scantily furnished, and without heat or facilities for it, unless furnished by the lodgers at their own expense. Very few can afford this, and, as a consequence during the winter evenings, they are obliged to sit with shawl or cloak over their shoulders while at work, from two to three hours every evening, during the busy season of their work. One would hardly think it, but upwards of 500 girls and women are employed in making dolls' clothing, at piece work, during the busy season of 16 weeks per year. Average wages per week, \$3.50; hours of labour per day, 10. Nearly all carried their dinners. Many of these working women are married, doing their housework before coming and after returning from work. Women who work on dresses and cloaks (wholesale and custom) earn on an average per year \$238, and wholesale \$186. Average hours of labour per week, 60. Milliners: in the establishments visited there were 59 who received \$12 per week; 63, \$10; 207, \$8; 154, \$7; 309, \$6; 113, \$4.50; 60, \$3; number, 965; hours of labour per day, 10; average number of weeks of busy season, 16.1

"The following is a summary of the investigation in shirtmaking: number employed, 1,297; general average wages per week, \$5.96. Cutters, 28; general average wages per week, \$10.28. Machine operators, 176; general average wages per week, \$7.88. Shirt bosoms, 179; general average wages per week, \$5.83. Wristbands, 252; general average wages per week, \$5.34. Finishers, 538; general average wages per week, \$3.46. General work, 124; general average wages per week, \$3. Average hours of labour per week, 60; average number of weeks of the busy season, 32; average price of board, 4.50; general average earnings per year, \$190.72.

"The *Bureau* says that the oft-repeated remark that 'the working men have prevented the working women from entering industrial employments' is not true:—

"Cases of such interference are rare exceptions. It is in entering the professions that women have had and are now having the greatest opposition. In weaving, a woman receives the same price per yard as a man. The professions show the most marked injustice in this regard, yet in many of them women are even better or worth more than men. It is not because she produces less or is worth less in the market than a man, that she receives less salary and less wages, for neither men nor women are paid what they earn or according to what they earn. If they were, those employments that yield the largest profits would pay the largest wages, and those that yield the least the lowest wages; and thus, when any given industry is receiving a large percentage of gain, the *employés* would share it in the same ratio. But any manufacturer would at once say, 'That is not the way in which business is conducted, for we must make money when business is good. Now the labourer is poor, and though he would be glad to share our gains, he could not afford to share our losses.' One of the principal reasons why woman is kept from earning her own living decently is, the short season of her work. When the season is over, 'those who have homes with parents or relatives, with perhaps sufficient clothing to last until the next season, are comparatively safe; while those who have no homes, or having them are obliged to work at anything, thrown out of regular employment as they are, in months that find poor working men, their fathers, in like situations, are often driven to desperate means for a livelihood. For what must be the fate of many whose wages in the busy season are not more than \$6 or even \$3 per week, and sometimes even less? What can become of them, but to lead a life of feverish anxiety, living, as so many do, in miserable houses in dirty neighbourhoods, amid demoralising surroundings, where neither physical nor moral health is sure? Is it any wonder that vice, holding out promises of better shelter, food, and clothing, tempts so many from the path of virtue? Is it not clear that these low wages diminish the army of honest industry and increase the army of guilty crime? Is it not clear that the cry for 'cheap labour' brings dear cost elsewhere, leading to results that demand missionary work and Magdalen asylums, and charitable institutions, and the ceaseless

efforts of philanthropic hearts and hands, and all the costly outlay of charity and crime ?'

" Pursuing the subject still further, the *Bureau* observes that 'a great obstacle in the way of woman's success as a wage labourer, is found in the lack of motive consequent upon her expectation of being married. The subdivision of labour, through its destruction of the need of skill, is rendering her more profitable as an *employé*; but the motive to advancement and success will only come to the majority of women when the hours of labour are reduced to a minimum, and perfected machinery has rendered labour attractive and entertaining. When men and women will have learned to co-operate in industry, new motives to work will have arisen that will not interfere with marriage, or the necessity of working except in household duties after marriage may disappear. Another disadvantage growing out of the same causes as those already enumerated, is the small chance of promotion or advancement in any calling she may choose. Yet this chance of escape from wage labour, by becoming an employer, is, in one sense, increasing with women, the principal impediment being the force of custom, that in this as in other matters, amounts to prejudice. But even were the prejudice removed, the poor working woman would find her poverty of means a sufficient barrier to any advancement beyond that of forewoman or superintendent; for in the employments in which the most women are engaged, very large capital is required to make the business successful and profitable."

III.—*Synopsis of the International Congress, with Names of Delegates.*

THE President and Council have thought it desirable, for the information of Fellows of the Society, to print the subjoined digest of the proposed program of the Eighth International Statistical Congress, to be opened at St. Petersburg, on 20th August, 1872. The digest has been kindly prepared by Dr. Mouat. His Excellency State Councillor Semenow, is the President of the Preparatory Commission:—

The organising commission of the Seventh Session of the International Statistical Congress decided that the Eighth Session should be held at St. Petersburg.

This Session belonged properly to 1871, but the political state of Europe in that year decided the Imperial Government of Russia to adjourn it to 1872.

By an imperial decree, bearing date the 24th of November, 1871, a preparatory commission was appointed to draw up a preliminary program of the proposed Congress, and the same decree created an organising committee to make all the needful preparatory arrangements for the Eighth Session.

The Emperor Alexander II, as a special mark of the great interest taken by His Imperial Majesty in the labours of the Congress, has been graciously pleased to nominate His Imperial Highness the Grand Duke Constantine, President of the Council of the Empire and of the Imperial Societies of Geography and Archæology, to be Honorary President of the Eighth Session.

The organising commission, placed under the presidency of one of the ministers, has for vice presidents Prince Lobaus Rostowsky, General Griegl, and State Councillor Semenow, president of the preparatory commission. This commission constitutes the provisional committee of the Congress.

The members of this Commission were named, and to the president was delegated the duty of conducting the general correspondence with the statistical officers and the foreign members of the Congress.

The program of the coming Session was drawn up by the provisional committee, and preparatory to its submission to the organising commission, is made known to all learned foreigners proposing to take part in the Congress, to elicit the

judicious criticisms necessary to impress a distinctive international character on the work of the Congress.

The 20th of August was selected as the date of meeting of the Congress, in deference to the convenience of foreign members, and to secure sufficient time for preparation.

The number of Sections has been reduced to four, so as to secure the attendance of an official or other delegate at each Section, and, with a view further to impress a distinctive international character on the proceedings, a preliminary Congress (*Avant-Congrès*) will be held, to consider, sift, and analyse the matters to be submitted to the General Congress, to save time and trouble to the official delegates and the Presidents of the Sections.

The program of the preliminary Congress is subjoined:—

- A. Organisation of the International Congress.
- B. Work to be undertaken by the Congress in international and comparative statistics.
- C. Special propositions of some foreign members—such as that of Dr. Engel for an international geographical dictionary.

FIRST SECTION.—*Statistics of Population, Methodology of Statistics.*

1. Questions relating to numbering of the people (census).
 - a. Application of the method of personal registration.
 - b. Complementary census of those of a nation who are resident or travelling in foreign countries.
 - c. Nomenclature of professions.
2. Analysis of questions relating to population registers.
3. Questions relating to observations on the physical development of man.
4. Application of the geographic method to statistics.
5. Graphic methods in statistics.

SECOND SECTION.—*Statistics of Industry.*

6. General statistics of industry.
7. Statistics of mines and factories.

THIRD SECTION.—*Statistics of Commerce and Postal Relations.*

8. Statistics of external commerce.
9. Unification of the nomenclature and classification of goods carried by railways and by water communication.
10. Statistics of postal relations.

FOURTH SECTION.—*Statistics of Criminal Justice (Crime).*

11. Questions of criminal statistics.
 - a. Adoption of a comparative nomenclature of crimes, offences, and contraventions (illegal acts).
 - b. General classification of breaches of the criminal laws, according to their nature.
 - c. Casiers judiciaires (classification of judicial facts).
 - d. Mode of registering the data taken during a preliminary criminal inquiry (a trial before a magistrate prior to commitment).
 - e. Instruction criminelle.

This program is open to modification by the organising committee, especially on the showing of foreign members, and it will be the duty of the Preliminary Congress to determine the questions which are not sufficiently advanced for the adoption of a definitive decision.

The Preliminary Congress will meet on 16th August, four days before the opening of the Session, which will sit for six days, exclusive of the time necessary for

the projected visit of the members of the Congress to the Polytechnic Exhibition of Moscow.

PRELIMINARY CONGRESS.

A. *Organisation of the International Congress.*

The Russian program, after enumerating the purposes for which the International Statistical Congress had been instituted, the nature and extent of the inquiries in which it had been engaged, and the degree to which it has been able to fulfil its objects, expresses an opinion that its practical value had not been equal to its proposed design, and that the Congress had rather aimed at an ideal standard than elaborated the means of realising the conclusions at which it arrived.

The abstract tendency of the Congress towards pure science was not blamed, but it was deemed desirable to propose certain measures with a view to facilitate the application of, and to establish an international relation between the labours of the Congress and the working of the Statistical Institutions of different countries.

The Fifth Session, at Berlin, considered several motions for the reorganisation of these International Sessions. Dr. Engel thought the intervals between the Sessions too brief for giving practical effect to the decisions of the Congress, and advocated the institution of a permanent International Commission to watch over the general interests of statistics. This was strongly opposed, on the ground that it would change the character of the Congress, and deprive it of the patronage which the presence of official delegates from different Governments afforded to it, without impressing upon its decisions the obligatory character which would induce those Governments to accept them with the deference due to the formulæ of science.

Different circumstances prevented the examination of this question at the Sixth Congress, held at Florence, and it was discussed during the Seventh Session at the Hague, when, after the consideration of several propositions and amendments on which no definite decision was arrived at, the further consideration of the matter was postponed to the present Session.

It is now proposed to hold an after conference on the conclusion of the Congress to utilise the discussions with a view to a practical issue; and to assemble the official delegates at least twice in the intervals of the Sessions, which may be prolonged from two to five years, to discuss questions of administrative statistics, and to procure a mutual understanding regarding them between the representatives of the official statistics of different countries.

B. *Publication of International and Comparative Statistics.*

It is proposed to divide the preparation and publication of these statistics between twenty European States, each to undertake the elaboration of one or more branches of such statistics.

The mode of procedure in this matter has still to be settled—some advocating the working out of published statistics alone, others wishing to widen the inquiry, and, if necessary, to collect fresh materials for international purposes. The settlement of this question will be referred to the approaching Congress.

FIRST SECTION.—*Statistics of Population and Methodology of Statistics.*

In this Section will be discussed all questions relating to the census. The application of the method of individual registration, together with that of each bulletin containing all the facts relating to each household, will be specially considered in their applications to urban and rural populations.

The enumeration of the natives of a country travelling or residing in foreign States, will be recommended for general adoption.

An international nomenclature of professions, and of the classes which at present escape or evade enumeration, will also be submitted for consideration.

Questions relating to the analysis of population registers, and the means of recording movements of populations in the inter-census periods, will likewise be investigated.

To the important, extended, and difficult subject of the physical development of man at all ages and in all conditions, in sickness and in health, in public institutions and in private life following him, in fact, from the cradle to the grave, much time and attention will be devoted.

The question, in all its bearings, has not yet been fairly grasped as a whole, and if some leading principles can be formulated with exactness, a great step in advance will be taken.

The geographic and graphic methods of statistical investigation and records enter largely into the program, and an attempt will be made to harmonise the facts susceptible of illustration by those methods.

SECOND SECTION.—*Statistics of Industry.*

This Section will be devoted to the statistics of industry in general, and of mines and metallurgy in particular.

Under the former head will be considered textile industry, with the establishments, forces, and agency employed in textile productions, regarding all of which the information at present existing is said to be vague, scanty, and imperfect.

The following are suggested as desiderata in this branch of inquiry.

The distinctive characters of industry on the grand scale in factories, domestic industry, and the industrial employment of handicraft artisans.

The classification and nomenclature of all such industries to be collected afresh, with special reference to the classifications proposed and adopted for industrial products, whether in official statistics, or in great national and international exhibitions.

The technical elements of each class of industry to be specially treated, but in such manner as to admit of the comparison and addition of the whole; the facts and figures to be arranged in two groups, according as they are collected annually, or at periods more or less removed; and the economic, physical, and moral states of the working classes to be investigated in great detail.

The whole subject of mines and metallurgy, and of mineral substances not entering into those categories, but forming important branches of human industry, to be carefully reconsidered in all their relations, economic, scientific, and general, regarding which the considerations requiring special discussion and specific action are referred to in the program.

THIRD SECTION.—*Statistics of Commerce and Postal Relations.*

8. Statistics of external commerce.

The chief questions to be discussed in this branch of inquiry are, the nomenclature and classification of all articles of international traffic, and merchandise, whether carried by rail or by water communication, with special reference to the third and sixth resolutions of the last Congress, which will form an introduction to the deliberations of the St. Petersburg Session. The first of these relates to the classification of imports, exports, and merchandise in transit, with a view to the introduction of simple and uniform tables, with suitable subdivisions to show the exact bearings and relations of international commerce. The last considers the best means of determining the value of imports and exports.

The principal points of interest and difficulty connected with this branch of international statistics, are explained and illustrated in the program; the general directions to be taken to arrive at a practical conclusion, are stated with force and clearness, and as respects the nomenclature of goods carried by rail and by water, in considerable detail. In regard to the former, the whole question of railway traffic is raised, as being now by far the most important agent in the movements of commerce.

This Section concludes as follows:—

“ These considerations induce us to think that it will be very useful to submit for discussion by the Congress the question of the unification of the general and international nomenclature of merchandise in circulation.

“ We propose in consequence to essay a general nomenclature based on a comparative study of the classifications adopted to record the movements of merchandise by the administrations of the railways and the water communications of different countries, avoiding, as much as possible, mixed groups of goods, and including in the nomenclature only such classes of merchandise as play an important part by the extent of their circulation and the importance of their bearing on production, consumption, and international relations.”

10. Statistics of postal relations.

The extension of postal relations in all countries by the introduction of uniform low rates of charge, and the consequent penetration of correspondence into the remotest corners of every State, invest this subject with particular interest.

Comparative and international statistics have not yet been collected, and information is especially desired respecting the postal revenues and expenditure of all countries, which will consequently be submitted for discussion, to devise a uniform standard of record of all matters of interest, fiscal, commercial, and general, connected with the postal administration of different countries.

FOURTH SECTION.—*Statistics of Criminal Justice.*

In this Section the adoption of a comparative nomenclature of crimes, misdemeanours, and illegal acts (contraventions), is recommended, and will be submitted for consideration on the ground of its urgent necessity and non-existence.

A general classification of breaches of the criminal law, according to their nature; the collection of statistics of relapses into crime, with the moral and repressive influence of penalties and prisons; and the best means of registering facts connected with the investigation of criminal acts, will all form subjects of special inquiry and discussion.

The Council of the Statistical Society have appointed the following gentlemen as their Delegates to the International Statistical Congress, to be held at St. Petersburg, on the 20th August, 1872:—

William Farr, M.D., D.C.L., F.R.S., Foreign Corresponding
Member of the Institute of France, President of the
Statistical Society of London,
General Register Office, Somerset House, London, W.C.

Samuel Brown, Member of the Council of the Statistical Society,
11, Lombard Street, London.

Hammond Chubb, B.A., Secretary of the Bank of England,
Bickley, Kent.

Archibald Hamilton, Member of the Council of the Statistical
Society,
South Barrow, Bromley, Kent.

James T. Hammick, Barrister-at-Law, Treasurer of the Statis-
tical Society, Secretary of the Registrar-General's
Department, and a Member of the Census Commis-
sion,
General Register Office, Somerset House, London, W.C.

Frederick Hendriks, Member of the Council of the Statistical
Society, Knight of the Order of Loasa,
1, King William Street, London, E.C.

Professor Leone Levi, Barrister-at-Law, Member of the Council of the Statistical Society,
10, Farrar's Buildings, Temple, London, E.C.

Frederick J. Mouat, M.D., Deputy Inspector - General of Hospitals, Her Majesty's Indian Army, Member of the Council of the Statistical Society,
12, Durham Villas, Kensington, London.

R. H. Inglis Palgrave, Member of the Council of the Statistical Society,
11, Britannia Terrace, Yarmouth.

Thomas Bond Sprague, M.A., Vice-President of the Institute of Actuaries,
18, Lincoln's Inn Fields, London.

William Tayler, Barrister-at-Law, Member of the Council of the Statistical Society,
28, Park Street, Grosvenor Square, London.

IV.—*The Consumption of Tea.*

THE following account is from the *Pall Mall Gazette*:—

“Some economic facts of considerable interest are disclosed by a brief return issued from the statistical department of Her Majesty's Customs. In this paper are set out year by year, from 1801 to 1871, the weight, the price in bond, and the rate of duty of the tea consumed in the United Kingdom. The table, therefore, embraces seventy-one years. In the first year, when the population of the kingdom was 15,828,000, the average price of tea being 4s. 2½d. per lb. (market price 3s., duty 1s. 2½d.), the quantity consumed was 23,730,000 lb., or 1 lb. 8 oz. per head of population. The extreme contrast to this is presented by the last year of the series. In 1871 the population was 31,513,000, or just double that of 1801, the average price of tea 1s. 10½d. per lb. (in bond, 1s. 4½.; duty 6d.), the weight consumed 123,402,000 lb.; the rate per head, 3 lb. 15 oz. The lapse of half-a-century brought this change to the tea drinkers of the nation; the price to the consumer had fallen 55 per cent.; the average weight consumed by each individual of the community had increased by 166 per cent. The lowest price in the return and the highest rate of consumption are those just quoted for 1871. The decrease in the rate of consumption, with a market rise of price, is obvious enough generally. Tea was rising from 1801 to 1809, when the price was 6s. 10d., or 2s. 7½d. more than in 1801; the rate per head was only 1 lb. 3 oz. or 5 oz. less than at the commencement of the century. During the twenty-five years, 1809 to 1833, the rate of consumption, though generally following the fluctuations of price, indicates no increase of permanent demand. Prices varied in that interval between 6s. 10d. and 4s. 2d.; the rate of consumption between 1 lb. 3 oz. and 1 lb. 6 oz. Viewed by the light of subsequent developments, the trade appears to have been stagnant, so much so that in 1834 and 1835, though tea was cheaper than in 1801, the rate per head consumed was rather less. It is not till we reach 1846 that any very marked improvement is established; then, the price was 3s. 3¼d., the rate per head

1 lb. 11 oz. Thence, with scarcely a check, the rate of consumption has continued to augment up to the present time. The financial history of the last decade will be in the memory of most people. The tea duties have been an important feature in all the budgets of the time. This period can be most succinctly illustrated by abstracting and condensing some of the figures of Mr. Baxter's paper.

The Price and the Rate of Consumption of Tea in the United Kingdom during Ten Years.

	Price of Tea per lb. to Consumer.		Whereof was the Duty.		Yearly Consumption of Tea in lbs.	Average Rate of Consumption per Head.	
	s.	d.	s.	d.		lbs.	oz.
1862.....	3	$-\frac{1}{4}$	1	5	$78\frac{3}{4}$	2	11
'63.....	2	$7\frac{3}{4}$	1	1	$85\frac{1}{4}$	2	14
'64.....	2	$6\frac{1}{4}$	1	—	$88\frac{1}{2}$	3	—
'65.....	2	$3\frac{3}{4}$	—	$7\frac{7}{8}$	98	3	5
'66.....	2	$1\frac{1}{4}$	—	6	$102\frac{1}{4}$	3	7
1867.....	2	$-\frac{7}{8}$	—	6	111	3	11
'68.....	2	$1\frac{1}{4}$	—	6	$106\frac{3}{4}$	3	8
'69.....	1	$11\frac{3}{4}$	—	6	$111\frac{3}{4}$	3	10
'70.....	1	$11\frac{1}{4}$	—	6	$117\frac{1}{2}$	3	12
'71.....	1	$10\frac{1}{2}$	—	6	$123\frac{1}{2}$	3	15

“The law of these figures is simple, with one slight exception the price the consumer had to pay decreased yearly; the rate of consumption increased concurrently with the diminution of price. But the decreased consumption of 1868 is probably due more to the long paralysis of manufacturing and commercial enterprise which followed the credit panic of 1866, than to the very small increase of price in the first named year. In 1865, when the duty was 1s. 5d., tea brought into the imperial exchequer 5,581,000*l.* Hence the reduction of the duty has entailed a clear loss to the treasury of 2,500,000*l.* a-year.”

REGISTRATION OF THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED DECEMBER, 1871.

BIRTHS AND DEATHS—QUARTER ENDED MARCH, 1872.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1872-66, and in the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—Numbers.

Years.....	'72.	'71.	'70.	'69.	'68.	'67.	'66.
Marriages No.	—	190,015	181,655	176,970	176,962	179,154	187,776
<i>Births</i> „	—	797,143	792,787	773,381	786,858	768,349	753,870
Deaths „	—	515,096	515,329	494,828	480,622	471,073	500,689

QUARTERS of each *Calendar Year*, 1872-66.

(I.) MARRIAGES:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	—	36,229	36,455	37,752	36,696	36,441	37,579
June „	—	48,652	46,720	43,202	45,364	45,589	48,577
September „	—	46,636	43,900	43,978	43,509	44,086	46,257
December „	—	58,498	54,580	52,038	51,393	53,038	55,363

(II.) BIRTHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	208,737	209,787	206,366	203,775	198,584	194,763	196,753
June „	—	200,877	203,615	188,618	202,839	199,660	192,437
September „	—	192,986	192,521	190,394	192,583	190,782	179,086
December „	—	193,493	190,285	190,594	192,852	183,144	185,594

(III.) DEATHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	134,992	138,603	143,773	133,096	119,676	134,008	138,136
June „	—	120,870	121,128	118,947	110,010	112,355	128,551
September „	—	121,236	124,297	114,644	130,482	108,513	116,650
December „	—	134,387	126,131	128,141	120,454	116,197	117,352

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS
LIVING in the Years 1872-66, and the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—General Ratios.

YEARS.....	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
Estmtd. Popln. of England in thousands in middle of each Year....	23,074,	—	22,760,	22,457,	22,165,	21,882,	21,608,	21,343,
Persons Mar- ried	—	16·7	16·7	16·2	16·0	16·2	16·6	17·6
<i>Births</i>	—	35·3	35·0	35·3	34·9	36·0	35·6	35·3
<i>Deaths</i>	—	22·7	22·6	22·9	22·3	22·0	21·8	23·5

QUARTERS of each Calendar Year, 1872-66.

(I.) PERSONS MARRIED :—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	—	13·8	12·9	13·2	13·9	13·5	13·7	14·3
June.....	—	16·9	17·1	16·7	15·7	16·7	17·0	18·3
September	—	16·3	16·3	15·5	15·7	15·8	16·2	17·2
December	—	19·7	20·4	19·3	18·6	18·7	19·5	20·5

(II.) BIRTHS :—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	36·3	37·1	37·4	37·3	37·4	36·5	36·7	37·6
June.....	—	36·3	35·4	36·4	34·1	37·2	37·1	36·2
September	—	34·0	33·6	34·0	34·0	34·9	35·0	33·3
December	—	33·9	33·7	33·6	34·0	34·8	33·5	34·4

(III.) DEATHS :—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	23·5	25·3	24·7	26·0	24·5	22·1	25·3	26·4
June.....	—	21·9	21·3	21·6	21·5	20·2	20·9	24·2
September	—	21·1	21·1	22·0	20·5	23·7	19·9	21·7
December	—	22·4	23·4	22·3	22·9	21·8	21·2	21·8

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended March, 1872.

1	2	3	4	5		6	7	8		9	10
Quarters ending	Average Price of Consols (for Money).	Average Rate of Bank of England Dis- count.	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.		
				Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.				
							In-door.	Out-door.			
1870	£		s. d.	d. d. d.	d. d. d.	s. s. s.				°	
Mar. 31	92 ⁵ / ₈	3·0	42 3	4 ¹ / ₂ —7 5 ³ / ₄	5 ¹ / ₄ —7 ¹ / ₄ 6 ¹ / ₄	95—110 102	164,387	892,822		38·0	
June 30	94	3·0	44 8	4 ¹ / ₂ —6 ³ / ₄ 5 ⁵ / ₈	5 ¹ / ₄ —7 ¹ / ₂ 6 ³ / ₈	115—135 125	144,226	825,337		54·4	
Sept. 30	91 ² / ₈	3·9	50 4	4 ³ / ₄ —7 ¹ / ₄ 6	5 ¹ / ₄ —8 6 ⁵ / ₈	100—140 120	138,444	787,976		60·7	
Dec. 31	92 ⁵ / ₈	2·5	50 1	5—7 ³ / ₄ 6 ³ / ₈	5 ¹ / ₄ —8 6 ⁵ / ₈	50—90 70	150,729	802,291		41·6	
1871											
Mar. 31	92 ¹ / ₈	2·7	53 7	5—7 ³ / ₄ 6 ³ / ₈	5 ¹ / ₄ —7 ³ / ₄ 6 ¹ / ₂	75—100 87	160,984	878,892		40·2	
June 30	93 ³ / ₈	2·5	59 9	5 ¹ / ₄ —7 ³ / ₄ 6 ¹ / ₂	5 ¹ / ₂ —8 ¹ / ₂ 7	51—76 63	140,338	805,519		51·5	
Sept. 30	93 ³ / ₈	2·2	57 9	5 ¹ / ₂ —8 6 ³ / ₄	5 ³ / ₄ —9 7 ¹ / ₂	60—77 68	132,065	769,482		61·3	
Dec. 31	93	4·2	56 3	5—7 ³ / ₄ 6 ¹ / ₂	5 ¹ / ₂ —8 ¹ / ₄ 6 ³ / ₄	75—104 89	140,955	758,474		41·8	
1872											
Mar. 31	92 ⁴ / ₈	3·0	55 4	5—7 ¹ / ₄ 6 ¹ / ₈	5 ³ / ₄ —8 ¹ / ₂ 7 ¹ / ₈	80—120 100	149,599	776,793		43·6	

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	Year 1871.	1871. Quarters ending				1872.
			March.	June.	Sept.	Dec.	March.
England and Wales	22·4	22·6	24·7	21·3	21·1	23·4	23·5
I. London	24·3	24·7	27·2	23·1	22·9	25·8	24·0
II. South-Eastern counties	19·1	18·8	21·1	18·6	17·8	17·6	19·2
III. South Midland „	20·2	20·3	23·3	19·4	18·7	19·9	20·8
IV. Eastern counties	20·1	20·3	21·3	19·1	20·1	20·8	21·1
V. South-Western counties	19·9	20·0	23·1	18·7	17·0	21·1	21·4
VI. West Midland „	21·8	21·7	24·1	19·8	19·3	23·4	22·9
VII. North Midland „	20·8	20·7	23·1	19·0	19·5	21·3	21·9
VIII. North-Western „	26·3	26·7	29·5	24·6	25·0	27·9	26·6
IX. Yorkshire	24·0	23·4	24·2	22·0	22·8	24·5	25·5
X. Northern counties	22·7	26·1	24·1	24·9	27·6	27·8	27·3
XI. Monmouthshire and Wales	21·6	21·1	23·6	21·1	17·9	21·7	23·9

Note.—The rates of mortality in this table have been calculated on populations based upon the recently enumerated numbers, and will not therefore correspond with those published in previous returns.

D.—*Special Average Death-Rate Table*:—ANNUAL RATE of MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1872-70.

	Area in Statute Acres.	Population Enumerated. 1871.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1872.	Mean '62-71.	1871.	1870.
In 131 Districts, and 58 Sub-districts, comprising the <i>Chief Towns</i>	3,287,151	12,900,297	March ..	25·4	27·4	26·8	27·5
			June	—	23·4	23·0	22·7
			Sept.	—	23·8	24·0	24·6
			Dec.	—	25·1	26·4	24·6
			Year	—	25·0	25·0	24·9
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly <i>Small Towns</i> and <i>Country Parishes</i>	34,037,732	9,803,811	Year	—	19·7	19·5	20·4
			March ..	20·9	22·6	21·9	23·8
			June	—	19·8	19·1	20·1
			Sept.	—	17·5	17·4	18·4
			Dec.	—	18·8	19·5	19·2

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

E.—*Special Town Table*:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the First Quarter of 1872, in TWENTY-ONE Large Towns.

Cities, &c.	Estimated Population in the Middle of the Year 1872.	Births in 13 Weeks ending 30th Mar., 1872.	Deaths in 13 Weeks ending 30th Mar., 1872.	Annual Rate to 1,000 Living during the 13 Weeks ending 30th March.		Mean Temperature in 13 Weeks ending 30th Mar., 1872.	Rainfall in Inches in 13 Weeks ending 30th Mar., 1872.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,393,052	69,750	49,316	37·9	26·8	43·0	8·52
London	3,311,298	30,650	19,801	37·1	24·0	44·2	6·40
Portsmouth.....	115,455	984	611	34·2	21·2	44·1	8·75
Norwich	81,105	686	692	33·9	34·2	41·8	6·33
Bristol.....	186,428	1,717	1,165	37·0	25·1	—	—
Wolverhampton.....	69,268	703	618	40·7	35·8	42·9	8·89
Birmingham	350,164	3,635	1,890	41·7	21·7	43·4	11·12
Leicester.....	99,143	1,064	579	43·1	23·4	43·1	6·80
Nottingham	88,225	765	672	34·8	30·6	42·9	7·36
Liverpool.....	499,897	4,932	3,441	39·6	27·6	44·1	7·99
Manchester.....	352,759	3,525	2,683	40·1	30·5	43·3	10·10
Salford.....	127,923	1,297	881	40·7	27·6	43·3	9·46
Oldham	84,004	855	618	40·9	29·5	—	—
Bradford	151,720	1,453	1,032	38·4	27·3	44·1	8·03
Leeds	266,564	2,639	1,841	39·7	27·7	43·4	7·53
Sheffield	247,847	2,414	1,840	39·1	29·8	42·8	9·16
Hull.....	124,976	1,158	812	37·2	26·1	—	—
Sunderland	100,665	1,048	827	41·8	33·0	—	—
Newcastle-on-Tyne	130,764	1,282	912	39·3	28·0	—	—
Edinburgh	205,146	1,709	1,766	33·4	34·6	39·4	8·70
Glasgow	489,136	5,021	3,809	41·2	31·3	41·2	11·51
Dublin.....	310,565	2,213	2,826	28·6	36·5	43·4	8·22

F.—*Divisional Table*:—MARRIAGES Registered in Quarters ended 31st December, 1871-69; and BIRTHS and DEATHS in Quarters ended 31st March, 1872-70.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 5 6 MARRIAGES in Quarters ended 31st December.		
			1871.	1870.	1869.
ENGLD. & WALES....Totals	37,324,883	No. 22,704,108	No. 58,498	No. 54,576	No. 52,014
I. London	77,997	3,251,804	9,226	8,387	8,032
II. South-Eastern	4,065,935	2,166,217	4,798	4,663	4,554
III. South Midland	3,201,290	1,442,567	3,408	2,993	3,221
IV. Eastern	3,214,099	1,218,257	3,246	3,031	3,116
V. South-Western	4,993,660	1,879,898	3,864	3,710	3,630
VI. West Midland	3,865,332	2,720,003	7,367	6,912	6,630
VII. North Midland	3,540,797	1,406,823	3,752	3,306	3,288
VIII. North-Western	2,000,227	3,388,370	8,980	8,282	7,632
IX. Yorkshire	3,654,636	2,395,299	6,705	6,279	5,653
X. Northern	3,492,322	1,414,066	3,707	3,573	3,061
XI. Monmthsh. & Wales	5,218,588	1,420,804	3,445	3,440	3,197

7 DIVISIONS. (England and Wales.)	8 9 10 BIRTHS in Quarters ended 31st March.			11 12 13 DEATHS in Quarters ended 31st March.		
	1872.	1871.	1870.	1872.	1871.	1870.
ENGLD. & WALES....Totals	No. 208,737	No. 209,787	No. 206,441	No. 134,992	No. 138,603	No. 143,991
I. London	30,650	30,728	30,384	19,801	21,889	21,406
II. South-Eastern	18,179	18,244	18,881	10,608	11,313	12,561
III. South Midland	12,386	12,817	12,687	7,592	8,303	8,451
IV. Eastern	10,206	10,590	10,523	6,457	6,417	7,018
V. South-Western	15,600	15,467	15,335	10,073	10,720	11,993
VI. West Midland	26,041	26,176	25,304	15,759	16,195	17,793
VII. North Midland	12,727	12,730	12,737	7,763	8,022	8,354
VIII. North-Western	33,871	33,221	32,905	22,920	24,638	23,959
IX. Yorkshire	22,464	22,876	22,144	15,563	14,357	15,107
X. Northern	14,009	14,204	13,206	9,891	8,434	8,288
XI. Monmthsh. & Wales	12,604	12,734	12,335	8,565	8,315	9,061

G.—General Meteorological Table, Quarter ended March, 1872.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, ESQ., F.R.S., &c.]

1872. Months.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames				
		Mean.	Diff. from Aver- age of 101 Years.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.		Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.
Jan. ...	41·3	+5·0	+3·3	39·9	+2·2	38·1	+3·4	9·3	-0·3	40·1	In. ·230	In. +·029	Gr. 2·7	Gr. +0·4	
Feb. ...	44·8	+6·3	+5·5	42·9	+5·3	40·7	+5·7	12·5	+1·1	44·2	·254	+·048	2·9	+0·5	
Mar. ...	44·6	+3·7	+3·1	42·4	+3·2	39·8	+3·6	15·8	+1·2	46·5	·245	+·030	2·8	+0·3	
Mean ...	43·6	+5·0	+4·0	41·7	+3·6	39·5	+4·2	12·5	+0·7	43·6	·243	+·036	2·8	+0·4	

1872. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Amnt.	Diff. from Aver- age of 57 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
											At or below 30°.	Be- tween 30° and 40°.	Above 40°.		
Jan. ...	89	+ 1	In. 29·463	In. -·286	Gr. 545	Gr. - 9	In. 3·6	In. +1·7	Miles. 325	11	19	1	20·1	40·2	
Feb. ...	86	+ 1	29·645	-·152	544	- 9	0·8	-0·8	302	6	21	2	24·2	42·4	
Mar. ...	84	+ 2	29·625	-·125	544	- 6	2·1	+0·5	276	14	11	6	19·9	46·7	
Mean ...	86	+ 1	29·578	-·188	544	- 8	Sum 6·5	Sum +1·4	Mean 301	Sum 31	Sum 51	Sum 9	Lowest 19·9	Highest 46·7	

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of January was 41°·3, being 5° higher than the average of 101 years, higher than the corresponding values in the years 1867-71, but lower than in 1866, when 42°·6 was recorded.

The mean temperature of February was 44°·8, being 6°·3 higher than the average of 101 years, higher than in the corresponding months of 1871 and 1870, but lower than in 1869, the value in that year being 45°·3. There is no other instance in the period 1771-1871 when this value has been exceeded, but in the years 1867, 1850, and 1794, when 44°·7 was registered in each of those years.

The mean temperature of March was 44°·6, being 3°·7 higher than the average of 101 years. In 1871 the corresponding temperature was 44°·9, but no other instance of higher mean temperatures in March is recorded till as far back as 1859.

The mean high day temperatures of January, February, and March, were higher than their respective averages by 3°·3, 6°·2, and 3°·9.

The mean low night temperatures of January, February, and March were higher than their averages by 3°·6, 5°·1, and 2°·6 respectively.

Therefore the days and nights in each of the three months were remarkably warm.

H.—Special Meteorological Table, Quarter ended 31st March, 1872.

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey.....	29·488	57·5	31·5	26·0	19·0	7·2	45·8	87
Osborne	29·496	59·7	22·3	37·4	29·0	12·1	44·0	92
Barnstaple	29·431	61·0	29·0	32·0	24·8	10·0	46·6	84
Royal Observatory	29·509	60·8	26·1	34·7	28·2	12·5	43·6	86
Royston	29·534	63·3	25·4	37·9	29·4	13·5	42·6	89
Norwich	29·515	59·0	25·5	33·5	26·8	11·7	41·7	89
Derby	29·428	60·0	26·0	34·0	27·3	11·6	42·6	90
Stonyhurst	29·396	60·0	22·4	37·6	28·3	9·5	42·5	88
Leeds	—	65·0	25·0	40·0	31·3	12·7	42·8	79
North Shields.....	29·483	56·0	25·0	31·0	26·5	9·8	41·3	88

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount Collected.
		N.	E.	S.	W.			
								in.
Guernsey.....	1·4	3	7	11	9	5·8	58	13·50
Osborne	0·2	4	4	15	8	7·1	57	10·64
Barnstaple	1·2	3	5	15	8	4·5	72	14·97
Royal Observatory	0·5	3	4	10	13	6·9	50	6·53
Royston	—	—	—	—	—	6·7	52	6·12
Norwich	—	3	6	15	6	—	47	6·78
Derby	—	4	3	14	9	—	63	8·43
Stonyhurst	1·1	3	5	14	7	7·9	86	14·89
Leeds	1·3	4	4	11	11	8·1	72	8·05
North Shields.....	1·7	4	5	11	11	7·0	63	8·62

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER
ENDED 31ST MARCH, 1872.

I.—*Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year; also the Number during each Quarter of the Years 1872-68 inclusive.*

	1872.		1871.		1870.		1869.		1868.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1st Quarter—										
Births	29,506	3·47	28,902	3·43	28,674	3·44	28,429	3·44	28,697	3·50
Deaths	21,245	2·50	19,756	2·34	22,184	2·66	20,431	2·47	18,042	2·20
Marriages ..	5,820	0·68	5,415	0·64	5,631	0·67	5,291	0·64	5,287	0·64
Mean Tem- perature }	40°·7		39°·1		36°·9		40°·0		40°·6	
2nd Quarter—										
Births	—	—	30,583	3·63	30,645	3·67	29,472	3·56	30,983	3·78
Deaths	—	—	18,715	2·22	17,984	2·15	19,449	2·35	16,958	2·07
Marriages ..	—	—	5,946	0·70	5,754	0·69	5,596	0·67	5,661	0·69
Mean Tem- perature }	—		48°·7		51°·0		48°·4		51°·0	
3rd Quarter—										
Births	—	—	28,689	3·40	28,272	3·39	27,646	3·33	28,354	3·46
Deaths	—	—	16,835	2·00	16,555	2·03	16,532	2·00	16,659	2·03
Marriages ..	—	—	5,424	0·64	5,301	0·63	4,870	0·59	4,704	0·57
Mean Tem- perature }	—		56°·3		57°·1		56°·4		57°·4	
4th Quarter—										
Births	—	—	27,953	3·32	27,832	3·26	27,848	3·37	27,480	3·35
Deaths	—	—	19,338	2·29	17,344	2·08	19,377	2·34	17,757	2·17
Marriages ..	—	—	7,181	0·85	7,102	0·85	6,326	0·76	6,203	0·77
Mean Tem- perature }	—		41°·3		39°·6		40°·9		41°·5	
Year—										
Population.	3,397,625		3,366,375		3,335,418		3,304,747		3,274,360	
Births	—	—	116,127	3·45	115,423	3·46	113,395	3·41	115,514	3·53
Deaths	—	—	74,644	2·22	74,067	2·22	75,789	2·29	69,416	2·12
Marriages ..	—	—	23,966	0·71	23,788	0·71	22,083	0·66	21,855	0·66

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts during the Quarter ending 31st March, 1872, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,358,613	3,397,625	29,506	3·47	29	2,734	9·3	10·8
Town districts ...	1,919,316	1,956,648	18,268	3·73	27	1,627	8·9	11·2
Rural ,, ...	1,439,297	1,440,977	11,238	3·12	32	1,107	9·8	10·1

	Population.		Deaths.			Marriages.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,358,613	3,397,625	21,245	2·50	40	5,820	0·68	146
Town districts ...	1,919,316	1,956,648	14,081	2·88	35	3,906	0·80	125
Rural ,, ...	1,439,297	1,440,977	7,164	1·99	50	1,914	0·53	188

III.—*Bastardy Table:—Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 31st March, 1872.*

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	9·2						
Northern	6·6	Shetland	3·5	Forfar	10·8	Lanark	8·4
North-Western	6·1	Orkney	4·6	Perth	9·8	Linlithgow .	8·7
North-Eastern	14·4	Caithness	10·6	Fife	7·2	Edinburgh .	8·3
East Midland..	9·5	Sutherland....	5·0	Kinross	15·5	Haddington	7·1
West Midland.	7·6	Ross and } Cromarty }	4·8	Clackman- } nan	8·2	Berwick	10·6
South-Western	8·1	Inverness	7·1	Stirling	7·7	Peebles	7·3
South-Eastern.	8·4	Nairn	8·3	Dumbarton ..	5·8	Selkirk	8·5
Southern	15·1	Elgin	15·6	Argyll	9·8	Roxburgh ..	12·1
		Banff	16·2	Bute	4·5	Dumfries ...	17·9
		Aberdeen	14·1	Renfrew	6·5	Kirkeud- } bright .. }	13·5
		Kincardine....	12·9	Ayr	8·5	Wigtown ...	15·7

IV.—*Divisional Table:—MARRIAGES, BIRTHS, and DEATHS Registered in the Quarter ended 31st March, 1872.*

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1871. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND Totals	19,639,377	3,358,613	5,820	29,506	21,245
I. Northern	2,261,622	126,552	180	761	532
II. North-Western.....	4,739,876	166,261	313	1,147	784
III. North-Eastern	2,429,594	393,197	446	3,076	2,152
IV. East Midland	2,790,492	559,187	929	4,593	3,419
V. West Midland	2,693,176	250,982	329	1,997	1,459
VI. South-Western.....	1,462,397	1,183,055	2,611	12,315	8,327
VII. South-Eastern	1,192,524	470,355	753	3,999	3,459
VIII. Southern	2,069,696	209,024	259	1,618	1,113

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 31st December, 1871; and BIRTHS and DEATHS, in the Quarter ended 31st March, 1872.

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Popu- lation, 1871. (Persons.)						
		No.	No.	Ratio.	No.	Ratio.	No.	Ratio.
England and Wales	37,325,	22,704,	58,498	2·5	208,737	9·1	134,992	5·9
Scotland	19,639,	3,359,	7,181	2·1	29,506	8·7	21,245	6·3
Ireland	20,322,	5,403,	6,135	1·1	41,035	7·5	29,308	5·0
GREAT BRITAIN AND IRELAND }	77,286,	31,466,	71,814	2·2	279,278	8·8	185,545	5·8

Note.—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have *succeeded* in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births, deaths, and marriages are much under those of England and Scotland.—ED. S. J.

Trade of United Kingdom, 1871-70-69.—*Distribution of Exports* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (<i>excluding Gold and Silver</i>), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	Whole Years.					
	1871.		1870.		1869.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, } Norway, Denmark & Iceland, & Heligoland }	33,664,	10,479,	32,302,	11,032,	25,265,	9,609,
Central Europe; viz., Prussia, Germany, } the Hanse Towns, Holland, and Belgium }	46,827,	47,762,	40,964,	36,071,	40,485,	37,638,
Western Europe; viz., France, Portugal } (with Azores, Madeira, &c.), and Spain }	42,404,	24,354,	47,535,	17,266,	43,525,	16,510,
(with Gibraltar and Canaries)						
Southern Europe; viz., Italy, Austrian } Empire, Greece, Ionian Islands, and Malta }	8,063,	9,314,	6,347,	8,927,	7,963,	9,007,
Levant; viz., Turkey, with Wallachia and } Moldavia, Syria and Palestine, and Egypt }	24,393,	13,454,	21,799,	16,400,	25,856,	15,834,
Northern Africa; viz., Tripoli, Tunis, } Algeria and Morocco	1,009,	365,	553,	424,	469,	299,
Western Africa	1,942,	1,029,	1,759,	947,	1,644,	846,
Eastern Africa; with African Ports on } Red Sea, Aden, Arabia, Persia, Bourbon, }	196,	142,	80,	191,	121,	176,
and Kooria Moorla Islands						
Indian Seas, Siam, Sumatra, Java, Philip- } pines; other Islands	2,028,	1,332,	1,798,	1,724,	2,220,	1,520,
South Sea Islands	76,	23,	100,	50,	10,	18,
China, including Hong Kong	12,062,	10,986,	10,002,	11,160,	10,264,	10,420,
United States of America	60,066,	34,229,	49,805,	28,335,	42,520,	24,628,
Mexico and Central America	1,453,	1,359,	1,353,	1,271,	1,465,	843,
Foreign West Indies and Hayti	3,531,	4,075,	5,799,	3,962,	5,165,	1,853,
South America (Northern), New Granada, } Venezuela, and Ecuador }	1,364,	3,006,	1,127,	2,336,	1,388,	2,598,
„ (Pacific), Peru, Bolivia, } Chili, and Patagonia }	8,160,	4,210,	8,841,	4,453,	7,754,	3,382,
„ (Atlantic) Brazil, Uruguay, } and Buenos Ayres	9,838,	9,824,	8,618,	8,516,	9,377,	10,319,
Whale Fisheries; GrnInd., Davis' Straits, } Southn. Whale Fishery, & Falkland Islands }	147,	12,	215,	7,	77,	13,
<i>Total—Foreign Countries</i>	257,223,	175,955,	238,997,	153,072,	225,568,	145,513,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	36,877,	20,866,	31,056,	22,548,	39,309,	20,101,
Austral. Cols.—N. So. W., Viet., and Queensld. } „ „ So. Aus., W. Aus., Tasm., }	9,002,	7,118,	10,219,	7,247,	8,913,	9,826,
and N. Zealand	5,515,	2,916,	3,857,	2,655,	3,234,	3,598,
British North America	9,258,	8,296,	8,513,	6,801,	7,734,	5,157,
„ W. Indies with Btsh. Guiana & Honduras } Cape and Natal	7,152,	3,161,	6,045,	3,522,	6,214,	2,657,
Br. W. Co. of Af., Ascension and St. Helena } Mauritius	2,876,	2,198,	2,875,	1,867,	2,726,	1,572,
Channel Islands	729,	698,	405,	686,	613,	657,
	836,	503,	872,	483,	667,	382,
	567,	808,	457,	760,	451,	582,
<i>Total—British Possessions</i>	72,812,	46,564,	64,299,	46,569,	69,861,	44,532,
General Total£	330,035,	222,519,	303,294,	199,641,	295,429,	190,045,

* *i.e.*, British and Irish produce and manufactures.

IMPORTS.—(United Kingdom.)—First Two Months (January—February), 1872-71-70-69-68.—Computed Real Value (*Ex-duty*), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.

(First Two Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
RAW MATLS.— <i>Textile, &c.</i>	Cotton Wool	13,273,	13,387,	8,032,	6,702,	4,686,
	Wool (Sheep's) ..	3,507,	2,307,	1,465,	1,667,	433,
	Silk*	2,359,	2,269,	2,813,	2,296,	2,530,
	Flax	615,	226,	502,	408,	349,
	Hemp	1,021,	686,	382,	364,	283,
	Indigo	1,135,	774,	348,	377,	214,
		21,910,	19,649,	13,542,	11,814,	8,495,
" " <i>Various.</i>	Hides	998,	530,	234,	252,	202,
	Oils	676,	789,	364,	446,	437,
	Metals	1,929,	1,345,	429,	423,	401,
	Tallow	520,	618,	221,	222,	142,
	Timber	489,	338,	190,	184,	205,
		4,612,	3,620,	1,438,	1,527,	1,387,
" " <i>Agricult.</i>	Guano	158,	651,	253,	41,	171,
	Seeds	1,948,	1,389,	229,	451,	409,
		2,106,	2,040,	482,	492,	580,
TROPICAL, &c., PRODUCE.	Tea {	2,749,	3,063,	2,229,	2,430,	2,169,
	Coffee	553,	482,	138,	283,	345,
	Sugar & Molasses	3,347,	2,171,	1,859,	1,525,	1,466,
	Tobacco	411,	456,	128,	141,	316,
	Rice	300,	174,	44,	224,	139,
	Fruits	475,	961,	281,	305,	264,
	Wines	1,147,	900,	661,	745,	745,
	Spirits	497,	641,	413,	351,	285,
		9,479,	8,848,	5,753,	6,004,	5,729,
FOOD	Grain and Meal.	6,661,	4,540,	4,700,	6,122,	5,870,
	Provisions	3,257,	2,495,	1,607,	1,639,	1,374,
		9,918,	7,035,	6,307,	7,761,	7,244,
Remainder of Enumerated Articles		6,167,	4,129,	1,668,	2,044,	1,524,
TOTAL ENUMERATED IMPORTS		54,192,	45,321,	29,190,	29,642,	24,959,
Add for UNENUMERATED IMPORTS (say)		4,500,	5,665,	7,297,	7,410,	6,240,
TOTAL IMPORTS		58,692,	50,986,	36,487,	37,052,	31,199,

* "Silk," inclusive of manufactured silk, "not made up."

EXPORTS.—(United Kingdom.)—**First Three Months** (*January—March*),
1872-71-70-69-68.—*Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.*

(First Three Months.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
MANFRES.—Textile.	Cotton Manufactures..	15,382,	13,066,	13,458,	12,339,	12,452,
	„ Yarn	4,069,	3,165,	3,585,	3,382,	4,168,
	Woollen Manufactures	8,328,	5,757,	5,693,	5,406,	4,262,
	„ Yarn	1,870,	1,204,	1,316,	1,357,	1,681,
	Silk Manufactures.....	637,	517,	605,	287,	246,
	„ Yarn	265,	320,	56,	47,	43,
	Linen Manufactures	2,219,	1,689,	1,855,	1,810,	1,713,
	„ Yarn	558,	504,	622,	601,	640,
		33,328,	26,222,	27,190,	25,229,	25,205,
	Sewed. Apparel	694,	622,	419,	685,	483,
	Haberd. and Millnry.	1,589,	1,340,	1,146,	1,093,	1,089,
		2,283,	1,962,	1,565,	1,578,	1,572,
METALS, &c.	Hardware	1,046,	715,	1,023,	903,	833,
	Machinery	1,571,	849,	1,050,	887,	809,
	Iron	6,251,	4,298,	4,240,	3,596,	2,924,
	Copper and Brass.....	669,	568,	855,	676,	844,
	Lead and Tin	418,	291,	986,	1,078,	810,
	Coals and Culm	1,644,	1,106,	1,147,	1,053,	1,051,
		11,599,	7,827,	9,301,	8,193,	7,271,
Ceramic Manufcts.	Earthenware and Glass	640,	489,	597,	623,	555,
Indigenous Mnfrs.	Beer and Ale.....	648,	522,	575,	532,	539,
and Products.	Butter	74,	62,	57,	66,	48,
	Cheese	20,	32,	27,	21,	30,
	Candles	60,	41,	27,	34,	40,
	Salt.....	80,	105,	61,	81,	89,
	Spirits	51,	51,	44,	47,	46,
	Soda	467,	305,	295,	308,	340,
		1,400,	1,118,	1,086,	1,089,	1,132,
Various Manufcts.	Books, Printed	165,	134,	134,	144,	145,
	Furniture	—	—	47,	45,	36,
	Leather Manufactures	930,	1,126,	612,	605,	559,
	Soap	72,	46,	53,	50,	60,
	Plate and Watches	40,	36,	101,	106,	75,
	Stationery	126,	96,	117,	95,	88,
		1,333,	1,438,	1,064,	1,045,	963,
Remainder of Enumerated Articles		3,579,	4,120,	2,525,	2,830,	2,600,
Unenumerated Articles.....		3,013,	3,255,	2,350,	2,216,	2,125,
TOTAL EXPORTS.....		57,175,	46,431,	45,678,	42,803,	41,423,

SHIPPING.—(United Kingdom.)—*Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Three Months (January—March), 1872-71-70.*

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1872.		1871.		1870.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
FOREIGN COUNTRIES.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Russia { Northern ports	33,885	12,277	17,084	15,677	21,313	4,851
{ Southern „	219,632	59,473	175,951	66,851	157,755	41,405
Sweden	87,923	62,902	32,472	24,692	50,227	30,233
Norway	193,744	36,079	85,245	22,310	113,493	36,782
Denmark	41,996	91,203	20,127	49,230	23,508	62,276
Germany	273,096	380,244	164,448	361,356	189,228	297,428
Holland	190,802	221,299	124,430	154,344	140,493	136,028
Belgium	198,538	186,141	152,759	184,843	135,358	143,669
France	402,806	683,022	246,884	595,123	314,857	640,618
Spain	175,083	164,677	158,590	126,048	125,420	166,865
Portugal	64,676	60,462	78,826	45,949	71,488	67,076
Italy	55,418	200,405	57,228	166,822	45,304	133,767
Austrian territories	12,579	57,002	21,964	35,533	31,505	43,779
Greece	30,146	15,475	15,461	14,509	*	*
Turkey (including Walla- chia and Moldavia) }	64,523	92,335	65,974	97,017	114,498	66,012
Egypt	153,333	111,631	102,355	118,029	100,832	121,664
United States of America	597,073	550,152	685,053	573,982	484,522	433,285
Mexico, Foreign West Indies, and Central America	43,808	120,529	21,422	109,711	53,214	124,408
Brazil	66,217	92,818	49,970	90,856	48,846	75,641
Peru	32,604	51,266	64,144	35,310	} 63,411	70,564
Chili	21,403	48,561	12,675	30,127		
China	44,550	20,640	41,046	23,339	*	*
Other countries	126,739	147,039	88,348	118,978	138,311	195,524
Total, Foreign Countries	3,130,574	3,465,632	2,482,456	3,060,636	2,423,583	2,891,875
BRITISH POSSESSIONS.						
North American Colonies	30,275	111,825	51,795	94,329	47,164	100,185
East Indies, including Ceylon, Singapore, and Mauritius	243,843	301,424	169,426	259,180	136,862	216,431
Australia and New Zealand	55,548	77,571	52,075	59,229	46,575	69,832
West Indies	20,774	57,447	30,428	55,773	19,491	45,141
Channel Islands	53,423	42,615	51,546	39,467	†	†
Other possessions	53,367	222,169	41,272	162,130	100,215	183,318
Total, British Possessions	457,230	813,051	396,542	670,108	350,307	614,907
TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.						
Three months { 1872.....	3,587,804	4,278,683	—	—	—	—
ended March { '71.....	—	—	2,878,998	3,730,744	—	—
{ '70.....	—	—	—	—	2,773,890	3,506,782

* Included in "Other countries."

† Included in "Other possessions."

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the Three Months (January—March), 1872-71-70.*

[000's omitted.]

(First Three Months.)	1872.		1871.		1870.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	1,767,	7,	2,249,	4,	1,728,	2,
So. Amca. and W. } Indies	216,	579,	332,	744,	433,	835,
United States and } Cal.	107,	696,	791,	1,822,	70,	519,
	2,090,	1,282,	3,372,	2,570,	2,231,	1,356,
France	77,	194,	8,	6,	29,	219,
Germany, Holl. & } Belg.	30,	1,727,	446,	126,	2,	5,
Prtgl., Spain, and } Gbrltr.	12,	10,	16,	10,	12,	33,
Mlta., Trky., and } Egypt	29,	10,	52,	19,	33,	4,
China	—	—	—	1,190,	—	—
West Coast of Africa	18,	—	32,	—	24,	—
All other Countries....	18,	18,	172,	948,	50,	5,
<i>Totals Imported....</i>	2,274,	3,241,	4,098,	4,869,	2,381,	1,622,
Exported to:—						
France	120,	55,	98,	52,	929,	379,
Germany, Holl. & } Belg.	322,	106,	1,999,	1,608,	3,	291,
Prtgl., Spain, and } Gbrltr.	949,	141,	42,	82,	—	—
	1,391,	302,	2,139,	1,742,	932,	670,
Ind. and China (via } Egypt)	600,	3,332,	354,	176,	96,	843,
Danish West Indies	—	—	—	—	—	—
United States	—	—	—	1,	62,	22,
South Africa	744,	54,	45,	—	26,	—
Mauritius	—	—	—	—	—	—
Brazil	217,	—	54,	—	37,	—
All other Countries....	1,896,	564,	59,	168,	185,	49,
<i>Totals Exported....</i>	4,848,	4,252,	2,651,	2,087,	1,338,	1,584,
<i>Excess of Imports</i>	—	—	1,444,	2,781,	1,043,	38,
„ <i>Exports</i>	2,574,	1,011,	—	—	—	—

REVENUE.—(UNITED KINGDOM.)—31st MARCH, 1872-71-70-69.

Net Produce in YEARS and QUARTERS ended 31st MARCH, 1872-71-70-69.

[000's omitted.]

QUARTERS, ended 31st March.	1872.	1871.	1872.		Corresponding Quarters.	
			Less.	More.	1870.	1869.
	£	£	£	£	£	£
Customs	5,017,	4,927,	—	90,	4,941,	5,485,
Excise	7,453,	7,365,	—	88,	7,014,	5,990,
Stamps	2,540,	2,412,	—	128,	2,425,	2,542,
Taxes	1,903,	1,911,	8,	—	2,157,	431,
Post Office	1,280,	1,290,	10,	—	1,170,	1,200,
Telegraph Service	170,	100,	—	70,	100,	—
Property Tax	18,363,	18,005,	18,	376,	17,807,	15,648,
	7,070,	4,674,	—	2,396,	5,784,	3,271,
Crown Lands	25,433,	22,679,	18,	2,772,	23,591,	18,919,
	110,	120,	10,	—	114,	102,
Miscellaneous	461,	706,	245,	—	1,124,	1,089,
Totals	26,004,	23,505,	273,	2,772,	24,829,	20,110,
			NET INCR. £2,499,203			

YEARS, ended 31st March.	1872.	1871.	1872.		Corresponding Years.	
			Less.	More.	1870.	1869.
	£	£	£	£	£	£
Customs	20,326,	20,191,	—	135,	21,529,	22,424,
Excise	23,326,	22,788,	—	538,	21,763,	20,462,
Stamps	9,772,	9,007,	—	765,	9,248,	9,218,
Taxes	2,330,	2,725,	395,	—	4,500,	3,494,
Post Office	4,680,	4,770,	90,	—	4,670,	4,660,
Telegraph Service	755,	500,	—	255,	100,	—
Property Tax	61,189,	59,981,	485,	1,693,	61,810,	60,258,
	9,084,	6,350,	—	2,734,	10,044,	8,618,
Crown Lands	70,273,	66,331,	485,	4,427,	71,854,	68,876,
	375,	385,	10,	—	375,	360,
Miscellaneous	4,060,	3,229,	—	831,	3,205,	3,356,
Totals	74,708,	69,945,	495,	5,258,	75,434,	72,592,
			NET INCR. £4,763,094			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST MARCH, 1872:—

An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 31st March, 1872; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 31st of March, 1872, in respect of such Charges.

Received:—

	£
Income received, as shown in Account I	26,004,234
Amount raised on Account of Fortifications, per Acts 30 and 31 Vict., } cap. 145, and 32 and 33 Vict., cap. 76	370,000
Amount received in Repayment of Advances for Public Works, &c. ...	657,016
Ditto for Greenwich Hospital	45,773
	<u>£27,077,023</u>

Paid:—

	£
Net Deficiency of the Balance in the Exchequer to meet the charge on } the 31st of December, 1872, as per last account	4,144,835
Amount issued to Repay Advances in aid of Ways and Means	1,000,000
Amount applied out of the Income to <i>Supply Services</i> (including } 700,000 <i>l.</i> Exchequer Bonds paid off)	11,437,881
Amount advanced for Greenwich Hospital	45,773
Charge of the <i>Consolidated Fund</i> on the 31st of March, 1872, viz.:—	
Interest of the Permanent Debt	£5,086,735
Terminable Annuities	1,478,355
Interest of Exchequer Bonds	11,375
Principal of Exchequer Bills	90,100
Interest of „ 	26,052
„ Deficiency Advances	2,199
„ Ways and Means Advances.....	7,753
The Civil List.....	102,032
Other Charges on Consolidated Fund	661,938
Advances for Public Works, &c.	408,515
Sinking Fund (including 50,869 <i>l.</i> on account of } telegraphs)	70,239
	<u>7,945,293</u>
Total	24,573,782
Surplus balance in the Exchequer on the 31st of March, 1872, beyond } the amount of the charge on the Consolidated Fund on that date, }	*2,503,241
payable in June quarter, 1872	
Total	<u>£27,077,023</u>

* Charge on 31st of March, 1872 (as above)	£7,945,293
Paid out of growing produce in March Quarter, 1872	1,105,882
Portion of the Charge payable in June Quarter, 1872	6,839,411
To meet which there was in the Exchequer on the 31st of } March, 1872.....	9,342,652

Surplus balance as above:—

Great Britain	£1,416,713
Ireland	1,086,528
	<u>2,503,241</u>

**BRITISH CORN.—*Gazette Average Prices (ENGLAND AND WALES),
First Quarter of 1872.***

[This Table is communicated by the Statistical and Commercial Department, Board of Trade.]

Weeks ended on a Saturday, 1872.		Weekly Average. (Per Impl. Quarter.)					
		Wheat.		Barley.		Oats.	
		s.	d.	s.	d.	s.	d.
Jan.	6	54	11	36	8	22	2
"	13	55	1	36	11	22	9
"	20	55	8	37	2	22	6
"	27	55	10	37	10	22	8
<i>Average for January</i>		55	4	37	1	22	6
Feb.	3	56	-	38	2	22	6
"	10	55	4	38	9	22	9
"	17	55	7	38	8	23	-
"	24	55	9	38	8	22	11
<i>Average for February</i>		55	8	38	6	22	9
March	2	55	10	37	10	23	6
"	9	55	8	37	11	23	2
"	16	55	5	37	7	22	11
"	23	54	6	36	6	21	10
"	30	54	2	37	-	22	1
<i>Average for March</i>		55	1	37	4	22	8
<i>Average for the quarter</i>		55	4	37	8	22	8

RAILWAYS.—PRICES, January—March;—and TRAFFIC, January—March, 1872.

[Abstract from "Heraopath's Journal" and the "Times."]

Total Capital Ex- pended Mlrs.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. 13 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 13 Weeks.		Dividends per Cent. for Half Years.		
		1st Mar.	1st Feb.	1st Jan.	'72.	'71.	'72.	'71.	'72.	'71.	Dec., '71.	June, '71.	Dec., '71.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
56,3	Lond. & N. Westn.	155	156	158½	1,516	1,507	1,770,	1,653,	80	84	87 6	67 6	72 6
46,8	Great Western ...	112	112	117½	1,386	1,386	1,110,	1,053,	61	58	53 9	45 -	37 6
19,9	„ Northern...	136	142	145	508	487	570,	528,	86	83	87 6	55 -	82 6
27,6	„ Eastern ...	49¾	50	52½	748	748	491,	465,	50	47	25 -	Nil	17 6
17,8	Brighton	75¾	73½	75¾	376	370	287,	256,	58	53	42 6	7 6	15 -
18,7	South-Eastern ...	97	97½	103½	346	346	331,	311,	73	69	60 -	26 3	40 -
17,6	„ Western...	108½	113	117½	574	560	336,	316,	45	43	62 6	47 6	57 6
205,0		105	106½	110	5,454	5,404	4,895,	4,582,	65	63	59 9	41 6	46 6
40,6	Midland	141¼	146	150¾	863	835	1,076,	964,	95	88	75 -	65 -	67 6
24,3	Lanesh. and York.	157½	160	165	428	428	713,	655,	128	117	80 -	77 6	70 -
13,7	Sheffield and Man.	72½	74½	78¾	254	249	315,	284,	95	87	40 -	15 -	25 -
43,7	North-Eastern ...	179	183	185	1,325	1,309	1,184,	1,081,	68	63	100 -	82 6	85 -
122,5		137½	141	145	2,870	2,821	3,288,	2,984,	82	81	73 9	60 -	61 9
23,1	Caledonian	116¼	119	123½	704	704	563,	528,	77	72	57 6	47 6	42 6
6,3	Gt. S. & Wn. Irind.	118	115	109	445	419	—	—	—	—	55 -	50 -	50 -
357,1	<i>Gen. aver.</i>	116	118	121	9,473	9,148	—	—	—	—	63 7	45 1	51 -

Consols.—Money Prices, 1st March, 92¼ to ¾.—1st Feb., 92¾ to ½.—1st Jan., 92½ to ¾.

Exchequer Bills.—1st March 2s. to 7s. pm.—1st Feb., 3s. to 8s. pm.—1st Jan., 2s. to 6s. pm.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the FIRST QUARTER (Jan.—March) of 1872.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public.	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	(Col. 1 minus col. 16.)	
£	1872.	£	£	£	£	1871. Per ann.
Mlms.		Mlms.	Mlms.	Mlms.	Mlms.	30 Nov. 3½ p.ct.
39,64	Jan. 3	11,01	3,98	24,64	25,65	
39,22	„ 10	11,01	3,98	24,22	25,37	
39,29	„ 17	11,01	3,98	24,29	25,23	
39,07	„ 24	11,01	3,98	24,07	24,98	
38,88	„ 31	11,01	3,98	23,88	25,11	
38,49	Feb. 7	11,01	3,98	23,49	25,00	
38,14	„ 14	11,01	3,98	23,14	24,64	
37,99	„ 21	11,01	3,98	22,99	24,48	
37,85	„ 28	11,01	3,98	22,85	24,38	
37,57	Mar. 6	11,01	3,98	22,57	24,68	
37,26	„ 13	11,01	3,98	22,63	24,29	
37,25	„ 20	11,01	3,98	22,25	24,25	
36,53	„ 27	11,01	3,98	21,53	23,37	

BANKING DEPARTMENT.

8	9	10	11	12	13	4	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabili- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£	1872.	£	£	£	£	£
Mlms.	Mlms.	Mlms.	Mlms.	Mlms.		Mlms.	Mlms.	Mlms.	Mlms.	Mlms.
14,55	3,19	7,37	25,02	,46	Jan. 3	14,99	20,95	13,99	,65	50,59
14,55	3,31	4,15	25,69	,44	„ 10	16,70	16,93	13,85	,68	48,15
14,55	3,35	4,23	25,22	,42	„ 17	16,30	16,81	14,02	,64	47,78
14,55	3,35	4,65	23,16	,40	„ 24	14,70	16,63	14,09	,70	46,12
14,55	3,36	5,47	23,46	,38	„ 31	13,99	18,72	13,77	,74	47,23
14,55	3,39	7,42	20,12	,40	Feb. 7	13,99	17,72	13,49	,69	45,89
14,55	3,41	9,31	20,61	,38	„ 14	13,99	20,03	13,50	,74	48,27
14,55	3,39	10,42	19,47	,39	„ 21	13,99	19,91	13,51	,80	48,22
14,55	3,40	11,28	19,86	,36	„ 28	13,99	21,19	13,47	,80	49,46
14,55	3,70	12,10	18,47	,36	Mar. 6	13,99	21,47	12,89	,81	49,17
14,55	3,70	13,11	18,41	,39	„ 13	13,96	22,40	12,97	,83	50,17
14,55	3,74	13,53	18,36	,40	„ 20	13,96	22,85	13,00	,76	50,58
14,55	3,74	11,86	19,16	,56	„ 27	12,94	22,95	13,16	,82	49,88

LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the FIRST QUARTER (January—March) of 1871; and in SCOTLAND and IRELAND, at the Three Dates, as under.

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. Saturday.	London: in each Week ended Wednesday.*	Private Banks. (Fixed Issues, 3,95).	Joint Stock Banks. (Fixed Issues, 2,74).	TOTAL. (Fixed Issues, 6,69).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1872.	£	£	£	£	1872.	£	£	£	£	£	£
Jan. 6	140,91	2,75	2,39	5,18							
„ 13	102,96	2,80	2,43	5,23							
„ 20	131,74	2,80	2,41	5,21							
„ 27	108,68	2,75	2,38	5,13	Jan. 27	1,70	3,21	4,91	4,07	3,74	7,81
Feb. 3	122,81	2,77	2,35	5,12							
„ 10	112,04	2,72	2,35	5,07							
„ 17	94,13	2,66	2,34	5,01							
„ 24	134,84	2,60	2,33	4,93	Feb. 3	1,65	3,17	4,82	4,04	3,66	7,70
Mar. 2	84,04	2,54	2,31	4,85							
„ 9	134,61	2,56	2,33	4,89							
„ 16	88,69	2,57	2,35	4,92							
„ 23	126,45	2,61	2,39	4,99							
„ 30	122,95	2,72	2,48	5,20	Mar. 30	1,69	3,23	4,92	4,28	3,51	7,79

* The Wednesdays preceding the Saturdays.

FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.

1	2	3	4	5 6		7	8	9
DATES.	London on Paris. 3 m. d.	London on Hamburg. 3 m. d.	New York. 60 d. s.	Calcutta.		Hong Kong. 6 m. s.	Sydney. 30 d. s.	Standard Silver in bars in London. pr. oz.
				India Council. 60 d. s.	At Calcutta on London. 6 m. d.			
1872.			per. cnt.	d.	d.	d.	per. cnt.	d.
Jan. 6	26·20	13·9 $\frac{3}{4}$	109 $\frac{3}{8}$	23 $\frac{3}{8}$	24 $\frac{1}{16}$	—	—	60 $\frac{3}{4}$
„ 20	·5	„	„ $\frac{1}{4}$	„ $\frac{1}{2}$	„	—	—	61 $\frac{1}{8}$
Feb. 3	·95	·10	109	„ $\frac{5}{8}$	„ $\frac{3}{16}$	53	—	„
„ 17	·90	„	„ $\frac{3}{8}$	„	„	„	—	„ $\frac{1}{16}$
Mar. 2	·75	·9 $\frac{3}{4}$	„	„ $\frac{1}{2}$	23 $\frac{1·5}{16}$	—	—	„ $\frac{3}{4}$
„ 16	·72 $\frac{1}{2}$	·10 $\frac{1}{4}$	„ $\frac{5}{8}$	„	24 $\frac{1}{16}$	52 $\frac{3}{4}$	—	„

JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1872.

REPORT of the COUNCIL for the FINANCIAL YEAR ended 31st December, 1871, and for the SESSIONAL YEAR ended with June, 1872, presented at the THIRTY-EIGHTH ANNIVERSARY MEETING of the STATISTICAL SOCIETY, held at the Society's Rooms, 12, St. James's Square, on Thursday, 20th June, 1872; with the PROCEEDINGS of that Meeting.

WILLIAM FARR, ESQ., M.D., D.C.L., F.R.S., *President, in the Chair.*

THE Council have now the pleasure of reporting to the Fellows the transactions of the Society for the Year 1871-72, being the *thirty-eighth* of the Society's existence.

The changes which have taken place in the list of Fellows in the Years 1869, 1870, and 1871, are exhibited in the subjoined table :—

Particulars.	1871.	1870.	1869.
Number of Fellows on 31st December	431	403	400
Life Members included in above	63	62	62
Members lost during year by death or with- drawal	17	22	24
New Members elected	45	25	37

The number of Fellows on the books of the Society at the close of the past year, is the largest the Council have recorded. The additions however since made to the list, after deducting losses, brings the number at the end of the Sessional Year on this day up to 449.

The financial condition of the Society is briefly represented by the annexed figures:—

Particulars.	1871.	1870.
	£	£
Balance at beginning of year	214	200
Receipts from all sources	880	852
Cash balance at end of year	290	214
Surplus of assets over liabilities at end of year	2,061	1,954

The transactions of the ordinary meetings of the year commenced on the 21st November last, with the delivery by the President of an Inaugural Address, which has appeared in the *Journal*. During the Session the following Papers were read:—

1871.

Nov. 21.—*Mr. J. T. Hammick*.—Suggestions for the Collection and Arrangement of Local Statistical Information.

Dec. 19.—*Dr. T. G. Balfour, F.R.S.*—Comparative Health of Seamen and Soldiers, as shown by the Naval and Military Statistical Reports.

1872.

Jan. 16.—*Professor Leone Levi*.—On the Limits of Legislative Interference with the Sale of Fermented Liquors.

Feb. 20.—*Dr. F. J. Mouat*.—On Prison Discipline and Statistics in Lower Bengal.

Mar. 19.—*Mr. Archibald Hamilton*.—On the Colonies.

April 16.—*Mr. Hammond Chubb, B.A.*—The Bank Act and the Crisis of 1866.

May 21.—*Mr. Stephen Bourne*.—The Official Trade and Navigation Statistics.

„ *Mr. John Glover*.—Tonnage Statistics of the Decade 1861-70.

June 18.—*Sir James Anderson*.—Statistics of Telegraphy.

„ *Mr. H. Jeula*.—Some Navigation Statistics.

„ *Mr. W. E. A. Axon*.—Statistics of the Consumption of Tobacco.

The Council think it right to express their acknowledgments of the care, labour, and ability which have been exhibited in these communications, and are more especially thankful to the President of the Society for his most interesting and eloquent address.

The Council upon the recovery of His Royal Highness the Prince of Wales from his serious illness, tendered to him an address in the following terms :—

May it please your Royal Highness,

We, the President, Vice-Presidents, and Council of the Statistical Society of London, desire to express to your Royal Highness our loyal and heartfelt congratulations on your complete recovery from an illness always dangerous and often fatal; and our hope that it may please Providence to preserve the health so happily restored.

We share these feelings and wishes with those who in every part of the world live under the happy rule of Her Most Gracious Majesty the Queen; but we have this special reason for wishing not to omit this tribute of our loyalty and respect that, for a long term of years, the Statistical Society of London had the great honour and advantage of placing at the head of their List of Fellows, as their Patron, His Royal Highness the Prince Consort, your lamented father.

We have the honour to subscribe ourselves,

Your Royal Highness's most loyal,
devoted, and obedient Servants,

(Signed) WILLIAM FARR, *President*,
and on behalf of the Vice-Presidents
and Council.

15th February, 1872.

The Council received this acknowledgment :—

“ MARLBOROUGH HOUSE,
“ February 21, 1872.

“ General Sir William Knollys has been directed to acknowledge, with the
“ Prince of Wales's sincere thanks, the congratulation on his recovery, of the
“ President, Vice-Presidents, and Council of the Statistical Society of London, and
“ His Royal Highness desires to express how much the kind terms in which they
“ have referred to their late Patron, the Prince Consort, have enhanced the
“ pleasure with which he has received their address.

“ William Farr, Esq. (President).”

Among the losses in our Fellowship during the past year, we count six eminent men removed by death, viz.: Charles Babbage, George Grote, W. Pollard-Urquhart, M.P., Sir Roderick Murchison, Charles Buxton, M.P., and Sir Thomas Dyke Acland. The President in his inaugural address, has dwelt at some length upon the connection of Mr. Babbage with the Society as one of its founders, and up to the period of his demise one of its most zealous supporters. Sir Thomas Dyke Acland, Sir Roderick Murchison, Mr. Charles Buxton, and Mr. George Grote, as prominent Fellows of the Society, are also noticed in the same address.

The Council have the pleasure of announcing that the next

meeting of the International Statistical Congress will be held at St. Petersburg on the 22nd August, 1872. The Council have appointed several gentlemen as their delegates to that meeting.*

A digest of the proposed programme of the Congress has been prepared by Dr. F. J. Mouat, and printed among the Miscellanea of the *Journal* (see pp. 238 *et seq.*).

The forty-first meeting of the British Association for the Promotion of Science, was held in August last at Edinburgh, Section F, to which "Economic Science and Statistics" are allotted, was presided over by Lord Neaves, one of the Lords of Session. Lord Neaves's opening address will be found in the December number of our *Journal*.

The question of providing House Accommodation for a certain number of the Learned Societies of London, continues to engage the attention of your Council. The combined committee appointed by the Societies to take all necessary steps in the matter, have not made to the Council a definitive report of their proceedings up to the present moment. The Council can but hope that success may ultimately attend the movement in behalf of this most important matter.

The Council, in conclusion, desire to express their satisfaction in the continued interest which is shown by the most eminent and practical men of the principal nations of the civilised world in Statistical Science and in its application to the many social problems of the present day.

Due notice having been given to the Fellows that Articles 10 and 12 of the Laws of the Statistical Society, be altered at this anniversary meeting as follows:—

Art. 10.—Leave out the first sentence, and substitute the following:—

"The business of the Society shall be conducted by a Council,
" which shall consist of the President, the Past Presidents
" on the List of Fellows, and thirty other Members."

Line 6.—Omit "four."

Art. 12.—Leave out the second sentence, and substitute the following:—

"The Vice-Presidents shall be the Past Presidents, and four
" other Members of the Society to be named by the
" President."

Resolutions to effect these alterations were put from the Chair, and carried *nem. con.*

* See *ante*, pp. 242—3, where the names of the Delegates are given. In that list Mr. F. Hendriks is, by a clerical error, described as a "Knight of the Order of Loasa,"—it should have been printed Order of "Wasa."

COUNCIL AND OFFICERS FOR 1872-73.

PRESIDENT.

WILLIAM FARR, M.D., D.C.L., F.R.S.

VICE-PRESIDENTS.

Thomas Graham Balfour, M.D., F.R.S.	William Golden Lumley, Q.C., LL.M.
*The Right Hon. The Earl of Derby.	*William Newmarch, F.R.S.
*The Right Hon. W. E. Gladstone, M.P.	*The Right Hon. The Lord Overstone.
William Augustus Guy, M.B., F.R.S.	*The Right Hon. Sir John Pakington, Bart., M.P., G.C.B.
James Heywood, M.A., F.R.S.	*The Right Hon. The Earl Russell, K.G.
*The Right Hon. The Earl of Harrowby, K.G.	*The Right Hon. The Earl of Shaftesbury, K.G.
*The Right Hon. The Lord Houghton.	

* *Fellows who have held the Office of President.*

TRUSTEES.

Sir John Lubbock, Bart., M.P., F.R.S. | William Newmarch, F.R.S.

COUNCIL.

Sir T. Dyke Acland, Bart., M.P.	Henry Hoare.
Thomas Graham Balfour, M.D., F.R.S.	Francis Jourdan.
Samuel Brown.	Professor Leone Levi.
James Caird.	William Golden Lumley, Q.C., LL.M.
Hammond Chubb, B.A.	Frederick John Mouat, M.D.
Hyde Clarke, D.C.L.	R. H. Inglis Palgrave.
Leonard Henry Courtney.	R. H. Patterson.
The Right Hon. The Lord Mayor of London.	Frederick Purdy.
Francis Galton.	The Right Hon. The Earl Stanhope, F.R.S.
Robert Giffen.	William Henry Smith, M.P.
William Augustus Guy, M.B., F.R.S.	Thomas Sopwith, M.A., F.R.S.
Archibald Hamilton.	Ernest Seyd.
James Thomas Hammick.	William Tayler.
Frederick Hendriks.	Richard Valpy.
James Heywood, M.A., F.R.S.	Professor Jacob Waley, M.A.

TREASURER.

James Thomas Hammick.

HONORARY SECRETARIES.

Frederick Purdy. | Professor Jacob Waley, M.A.

A vote of thanks to the President, Council, and Officers for their services during the past year, was carried unanimously.

The proceedings terminated with a vote of thanks to the Chair.

(I.)—BALANCE SHEET of RECEIPTS and PAYMENTS, YEAR ended 31st DECEMBER, 1871.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance in Bank, } 31st December, } 1870 }	£208	13 9	Rent	100	- -
Balance of Petty } Cash }	3	12 8	Salaries	200	- -
Balance of Adver- } tisement Cash ... }	1	4 9	Journal, Printing £311	17 9	
			„ Index 5	5 -	
	213	11 2		317	2 9
Dividends on Consols	35	5 -	Advertising	19	10 -
Subscriptions, viz.:—			Ordinary Meeting Expenses	27	16 1
12 Arrears £25	4 -		Library	15	8 11
291 for 1871 625	16 -		Miscellaneous Printing and } Stationery }	36	12 -
3 „ '72 6	6 -		Postage and Receipt Stamps	27	3 4
	657	6 -	Fire and Light	4	4 8
Compositions of three Fellows	63	- -	Furniture and Repairs	6	8 7
Journal Sales £115	5 1		Incidental Expenses	31	8 1
„ Advertise- } ments }	9	9 -	Annual Dinner.....	6	17 6
	124	14 1	Tayler Prize (second).....	10	10 -
			Balance on 31st } December, 1871... }	£279	2 7
			Balance of Petty } Cash }	4	7 -
			Balance of Adver- } tisement Cash ... }	6	14 9
				290	4 4
	£1,093	16 3		£1,093	16 3

(II.)—BALANCE SHEET of ASSETS and LIABILITIES on 31st DECEMBER, 1871.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
December Journal, } Printing (say) !..... }	90	- -	Cash Balance	290	4 4
December Journal, } Index to..... }	5	5 -	Stock:—		
		95 5 -	New 3 per Cents. } (£871 4s. 3d.)... }	£836	2 1
Miscellaneous (say).....	30	- -	3 per Cent. Consols } (£328 15s. 4d.) }	300	- -
Balance in favour of Society ...	2,061	1 5		1,136	2 1
			Property (Estimated Value):—		
			Books in Library	£400	
			Journals in Stock	200	
			Furniture	100	
				700	- -
			Arrears recoverable (say)	60	- -
	£2,186	6 5		£2,186	6 5

“ *Auditors’ Report 1871.* ”

“ STATISTICAL SOCIETY,

“ 12, ST. JAMES’S SQUARE, LONDON, S.W.,

“ 3rd February, 1872.

“ The Auditors appointed to examine the Accounts of the Society herewith

“ REPORT :—

“ That they have carefully compared the Entries in the Books with the several *Touchers* for the same, from 1st January to 31st December, 1871, and find them correct, showing the *Receipts* (including a Balance of 213*l.* 11*s.* 2*d.* from 1870) to have been 1,093*l.* 16*s.* 3*d.*, and the *Payments* 803*l.* 11*s.* 11*d.*, leaving a Balance in favour of the Society of 290*l.* 4*s.* 4*d.*

“ They have also had laid before them an estimate of the *Assets* and *Liabilities* of the Society, the *former* amounting to 2,186*l.* 6*s.* 5*d.*, and the *latter* to 125*l.* 5*s.* —*d.*,—showing a Balance in favour of the Society of 2,061*l.* 1*s.* 5*d.*

“ They further find that at the end of the year 1870 the number of Fellows on the list was 403, of whom 17 Died or Withdrew ; and 45 new Fellows were elected during the year, leaving on the list, on the 31st December, 1871, 431 Fellows.

(Signed)	“ HENRY G. BOHN,	} <i>Auditors.</i> ”
	“ WILL. PARE,	
	“ THOS. SOPWITH,	



STATISTICS of TELEGRAPHY. By SIR JAMES ANDERSON.

[Read before the Statistical Society, 18th June, 1872.]

CONTENTS :

	PAGE		PAGE
The Paper	272	II.—List of the Cables, their	
		Length and Weight, and	
APPENDIX.		Sea Depth	322
I.—An Account of Marine Cables			
Laid	313		

I PROPOSE in the following pages principally to establish, so far as available statistics will confirm, *first*, the effect of reduced tariffs upon telegraphy, both within the limits and outside the limits of a country, and *second*, to give a statement of all the submarine cables hitherto laid, and to express what, in my opinion, is established by all the experience we have obtained up to the present time.

There is no lack of telegraphic statistics, but they have not all been collected upon any uniform system, one class of telegrams has not been separated from another, and in every country, and with every private company, there has been a varying tariff at irregular intervals, under different political and commercial conditions, which makes the greater part of the statistics of little or no value for the purposes of comparison.

There are, however, sufficient reliable data to establish certain axioms and principles indicating very clearly the results to be anticipated in the future from tariffs or management under either Government or private control.

Belgium and Switzerland for twenty years have enjoyed a telegraphic system under the control of Government, and have been more than any other countries undisturbed by wars, political convulsions or change of superficial area, and, as might have been expected, the most reliable statistics are given by these countries. Add to this the fact that the chiefs of these administrations are men of unusual ability, who have given their undivided attention to the development and improvement of the system under their management, and to the logical statement of the cause and effect produced by any change whatever upon any branch of telegraphy.

We are indebted to Switzerland for the organisation of telegraphic statistics upon a uniform plan, and for originating the International Telegraphic Conventions, which have already been held at Paris, Vienna, and Rome.

I have been so much gratified by the report presented by the Belgian Minister of Public Works, M. Jamar, upon the result of the reductions of tariff from the year 1855 to 1869, that I have translated and produced it in an abridged form and embodied it in this paper, believing that it should be read by every one who cares to understand the subject.

I have read with care the able reports of Mr. Scudamore, the Chief of the Telegraph Administration of the United Kingdom, and I have made free with whatever extracts seemed to bear upon the point I wish to illustrate.

So much has, in fact, been already written by these authorities that I shall probably find it difficult to touch upon many points not covered by them; but, in the case of Belgium, the report is published in French, and not likely to be so extensively known as it ought to be in this country, without being produced in the abridged form, and practically applied to our own system in some such manner as I have attempted.

The reports of Mr. Scudamore have for their object the illustration of the probable effect which would result from the working of the inland telegraphs by the post office, together with a statement of the effect actually produced.

Although I find something about everything connected with telegraphs in reports already published, they are mainly restricted to the operation of internal telegrams, and I cannot well do wrong in freely using the information contained in them which seems to establish any fixed points whatever, either in relation to internal telegraphy or in relation to international telegraphs, the branch in which I am specially interested.

The following table is from Mr. Scudamore's report:—

TABLE I.—*A Statement showing the Total Number of Messages Transmitted, the Revenue Earned, the Working Expenses Incurred, and the Net Produce Earned by the Electric and International Telegraph Company in the Years 1862 and 1866, together with the Proportion of Working Expenses to Revenue, the Number of Messages to each Mile of Wire, the Revenue and Cost per Mile of Wire, and Revenue and Cost per Message in each of the Two Years.*

	1862.	1866.
Total number of messages transmitted	1,534,590	3,150,149
Being an increase at the rate of.....	—	105 per cent.
	£	£
Revenue	219,441	336,458
Being an increase at the rate of.....	—	53 per cent.
Working expenses	148,609	208,739
Being an increase at the rate of.....	—	40 per cent.
Net produce	70,832	127,719
Being an increase at the rate of.....	—	80 per cent.

TABLE I.—*Statement showing the Number of Messages Transmitted, &c.—*
Contd.

	1862.	1866.
	Per Cent.	Per Cent.
Proportion of working expenses to gross revenue	67	62
„ gross revenue to capital employed	24	32
„ net revenue „	7 $\frac{4}{5}$	12
Number of messages per mile of wire	44	66
	£ s. d.	£ s. d.
Gross receipt per mile of wire.....	6 5 1	7 1 5
Working cost „	4 4 9	4 7 9
Net receipt per mile of wire	2 — 4	2 13 8
Gross receipt per message.....	— 2 10 $\frac{1}{4}$	— 2 1 $\frac{1}{2}$
Working cost „	— 1 11	— 1 3 $\frac{3}{4}$
Net receipt per message	— — 11 $\frac{1}{4}$	— — 9 $\frac{3}{4}$

This table illustrates the effect of lowering the tariff upon the receipts and expenditure of a private company. The tariff was lowered several times upon different sections during this period, but it is not pretended that this was the sole cause of the increase of traffic, a part must be attributable to extensions of accommodation, and a part due to the growth of population and trade. But these facts remain, as the result of lowering the tariff:—

A. That while their business has increased at the rate of 105 per cent. their working expenses have increased at the rate of 40 per cent. only.

B. That though the work done by each mile of wire was greater by 50 per cent. in 1866 than in 1862, the cost per mile of wire was higher in 1866 by only 3 $\frac{1}{2}$ per cent.

C. That though in 1866 their net produce per message was less by 1 $\frac{1}{2}d.$ than it was in 1862, their total net produce was greater by 80 per cent. in 1866 than in 1862.

But it will be instructive at this point to compare this actual result with that which would have been obtained had the high tariff of 1862 been maintained.

In the following statement the estimated number of messages is arrived at by taking the mean increase in the number of messages from 1859 to 1862, the year when the tariff was reduced. (Table XXIV.)

The gross revenue is the amount of 2,726,264 messages, at 2s. 10 $\frac{1}{4}d.$, which is the gross receipt per message in 1862.

The working expenses are the actual figures for the year 1866, and it is certain they would have been considerably less had all the

conditions remained the same as in 1862, with no further extensions, and only the normal development of traffic at the high tariff to provide for.

TABLE II.—*The Electric and International Telegraph Company. Comparison of Actual Profits for the Year 1866, with the Estimated Profits had the Tariff of 1862 continued in Force to that Date.*

	Actual.	Estimate.
Total number of messages	3,150,149	2,726,264
Gross revenue.....	£ 336,458	£ 389,843
Working expenses	208,739	208,739
Net profit	127,719	181,104
Proportion of working expenses to gross revenue....	Per Cent. 62	Per Cent. 53
„ gross revenue to capital employed....	32	37
„ net „ „	12	17
Gross receipt per message	s. d. 2 1½	s. d. 2 10¼
Working cost „	1 3¾	1 6¼
Net receipt per message	— 9¾	1 4

We see, then, that had the high tariff been maintained the company would have earned an addition at least of 53,000*l.*, or a dividend of 17 per cent. net instead of 12 per cent. upon the capital employed.

It cannot be disputed that the public is better served by a low tariff and increased facilities, and that within certain limits this policy may be remunerative even to a private company. But it will be found throughout these pages to be equally indisputable that the highest return upon the capital invested will be obtained from a high tariff, and that the policy of a private company must always be to guard against unproductive extensions or facilities to the public, lest the capital be seriously increased and the company finds itself attacked when thus burdened upon the productive sections only by a new company with small capital, and the benefit of experience gained at the cost of others.

We find the companies in correspondence with the post office suggesting monopoly as a condition of further extensions and reduction of tariff. But Mr. Scudamore justly characterised this as “*creating a monopoly to earn dividends, instead of creating a monopoly to establish a self-supporting system for the benefit of the public.*” And in support of this latter object the report of July, 1866, com-

pares the progress made by the private companies in England with that made by the telegraphs under the control of the Belgian Government, in substance as follows :—

The companies had increased their wires to the extent of 39 per cent. only.

Belgium had increased theirs to the extent of 107 per cent.

The companies had increased their stations 33 per cent.

The Belgium Government had increased their stations 81 per cent.

By the combined operation of a reduced tariff and increased accommodation, Belgium had increased their inland messages at the rate of 557 per cent., although *the increase upon all kinds of messages* was only at the rate of 286 per cent.

In the same period the messages of all kinds transmitted by the telegraph companies of the United Kingdom have increased at the rate of 123 per cent. only.

Belgium transacted in 1866, on a system twice as great as it was in 1862, a business four times that of 1862, *and their working expenses were only twice as great for this quadrupled increase.*

The amount of their business on each mile of wire was greater by 86 per cent. in 1866 than in 1862, yet the cost to them of each mile of wire was somewhat lower in 1866 than in 1862. Their net revenue was lower than in 1862, *because they had aimed only at creating a self-supporting service*, and yet in 1866 they had a net revenue equal to $12\frac{1}{2}$ per cent. of their gross revenue.

Further, the report states, that under the *régime* of the Companies, the towns in the United Kingdom having a population exceeding 2,000 were served as follows :—

30	per cent.	well served,
40	„	indifferently served,
12	„	badly served,
18	„	not served at all,

these latter having an aggregate population exceeding half-a-million inhabitants.

By this process of reasoning, Mr. Scudamore established the conviction that the post office could so work the telegraph service of the United Kingdom as to produce a considerable profit, and yield immense advantages to the public, and he supported his arguments and the fitness of his department for this duty, by the results which it had effected in the money order system and the management of the post office savings bank, together with the enormous increase of postal communication.

Briefly stated, the annual distribution of letters had received an augmentation of 127 millions.

The distribution by the book post had proportionately increased.

The pattern post had been established, and made rapid progress.

The registered letters had increased 50 per cent.

The money order system had extended to the colonies, and the gross amount of money orders within the United Kingdom had risen from 13,800,000*l.* to 18,100,000*l.* per annum.

And he showed that the post office could bring to the performance of this new telegraph business 12,000 offices distributed equally, with regard to population, all over the kingdom.

“ Thus bringing the telegraphs closer to the population.

“ Extending the hours during which they could be used daily.

“ Reducing the charges for the transmission of telegrams.

“ And giving the facilities for the transmission of money orders by telegraph.”

The result will demonstrate that, in all these anticipations, Mr. Scudamore had reasoned justly, and he gave the following reasons to illustrate the impossibility of private companies carrying out the desired improvement.

The unavoidable accompaniments to private and joint-stock enterprise produce a series of *obstacles to cheapness and progress that only Government control can overcome.*

Rival companies did not supply additional facilities to the general public, but *only increased the number of competing lines and offices in the same centres of populous towns, which could have been as efficiently served by one company.*

The fact that two out of four of the companies must either have been run off the field or forced to amalgamate with the other two, did not improve the condition.

The capital was sunk, and the effect of amalgamation would be to induce the directors to preserve the high tariff, and restrict all further extensions, so as to preserve good dividends with a large reserve.

There were 2,000 miles of wire and 350 offices in excess of the number of either required to do the same work. There were four boards of directors and four sets of leading officials, such as managers, secretaries, engineers, and clerks, striving to make the largest possible return upon the least possible capital, and carrying on a wasteful competition without any benefit to the public.

It was obvious to Mr. Scudamore that this divided management and rivalry was sufficient to account for the feeble growth of telegraphs within the United Kingdom, and that *so long as private companies considered it a condition of their existence to do their utmost to procure dividends and to avoid every extension which might prove unproductive, or try experiments with tariffs which might prove disastrous, there could be no hope of the grand development in*

telegraphy which had become a feature in several of the continental nations.

When it was first proposed that the Government should purchase the inland telegraph, Mr. Scudamore anticipated that the total cost would be for the whole scheme fully mounted 2,500,000*l*.

But submarine cables and many important extensions, not previously contemplated, besides the higher value awarded to the companies by the arbitrators for the sale of their plant, swelled the capital to the large sum of 7,500,000*l*.

The revenue anticipated, was per annum, 673,838*l*., which for fourteen months, the period the last published report gives for comparison; equals, 786,000*l*.

The actual gross revenue for the fourteen months ending 31st March, 1871, 798,580*l*., or more than 10 per cent. upon the capital.

The working expenses were anticipated to be 360,000*l*. per annum, which for fourteen months gives 420,000*l*.

The actual working expenses were certain not to exceed for the fourteen months, 470,000*l*., about 58 per cent. of the revenue.

The balance of net profit is, therefore, more than sufficient to cover the charge for interest on capital.

The result showing $3\frac{3}{4}$ per cent. per annum on the money invested.

The reduction of the tariff has given to the public, upon the number of messages transmitted, a clear benefit of 300,000*l*., and 4,211 stations have been opened and gradually brought into use from the date of the transfer of the telegraphs to the post office to 31st May, 1871.

The number of offices belonging to private companies was about 1,500.

Mr. Scudamore predicted that even in the first year of the working of the telegraphs *with undivided management*, they would very nearly, if not actually, obtain the estimated gross annual revenue.

That this gross annual revenue must inevitably grow from year to year.

That the estimated nominal proportion of expenditure to revenue, about 58 per cent. would not be exceeded, and throughout his estimates and report he recognises the full value of the following principles:—

That nothing is more certain than the augmentation of business from the increase of facilities, the increase of speed, the accuracy of messages, and the certainty in the public mind that the transmission and reply can be relied upon within a given time.

The following statement proves the accuracy of the anticipated augmentation:—

TABLE III.—*Statement showing Total Number of Messages from 5th February, 1870, to 4th February, 1871, compared with the following Year.*

Total Number of Messages Forwarded, 1870 to 1871.	Total Number of Messages Forwarded, 1871 to 1872.	Increase.	Average Daily Increase.
9,486,240	12,108,855	2,622,615	7,185

We can rely, therefore, upon seeing in Mr. Scudamore's next report, besides an illustration of his great ability at organisation, the telegraphic correspondence augmented to a point which will appear fabulous, and be likely to convince those who have not contemplated the growth of this class of correspondence, that we are far from seeing the limit or grasping the full effect of this method of transmitting thought. Throughout these reports there has been no attempt to divide the inland, international, and transit telegrams from each other, nor was this subdivision needed for their purpose; but we shall see presently that there is an important difference between them.

I will now show what Belgium has established by twenty years' experience under Government control, and a study of telegraphic statistics more systematic and complete than has been possible with any other country.

I have translated and abridged that part of the report which may properly be termed "A STUDY OF THE THEORETICAL AND PRACTICAL EFFECT OF TARIFFS UPON ALL BRANCHES OF TELEGRAPHIC CORRESPONDENCE."

The report is signed by A. Jamar, Minister of Public Works, and will be found in its extended form, with appendixes demonstrating the principles of the tables in vol. xxviii of the "Annals of the Public Works of Belgium."

It begins with the statement that the tax of half-a-franc for telegrams within the State is a point beyond which no one would dream of further reduction.

But it is only one-half of the tariff charged for international messages, and the same difference exists in the *régime* of neighbouring countries.

At first sight this apparent anomaly suggests the logical propriety of international tariffs being composed of the sum of the internal tariffs.

A statement of the motives for maintaining a higher tariff for international telegrams demonstrates the following principles:—

1st. That in Belgium, notwithstanding the existence of the most favourable circumstances, *all reduction of tariff has resulted in a diminution of the net product.*

2nd. That in the interior service the diminution of net product has been of small importance, and has been accompanied by an immense development of correspondence, that is to say, of *service rendered to the public*.

3rd. That in the international relations *the reduction of the tariff has resulted in a considerable loss, with a much less development of correspondence*, as compared with the internal service, that is to say, *less service rendered to the public*.

Thus the Government is justified before all in reducing the tariff upon inland telegrams, and in deferring the reduction of the international tariff until the increase of traffic overtakes the deficit in revenue caused by the reduction.

These deductions have never been refuted, and carry with them mathematical proofs in support of the resolution formulated in the following terms at the Telegraphic Conference held at Vienna, 7th July, 1868.

“ Il n'existe aucune corrélation entre les taxes intérieures et les taxes internationales.”

TABLE IV *gives the Total Product and Expenses of the Telegraphic Service since its Origin, until the 31st December, 1869.*
[In this condensed report the centimes are omitted.]

Dates.	Gross Receipts.	Annual Expenses, Staff and Maintenance.	Net Products.
	frs.	frs.	frs.
1850 to 1851	88,675	59,116	29,559
'52.....	165,974	56,163	109,811
'53.....	265,536	69,706	195,830
'54.....	280,846	89,796	191,049
'55.....	265,940	111,500	154,440
'56.....	359,580	132,289	227,291
'57.....	407,012	177,673	229,339
'58.....	413,926	219,391	194,535
'59.....	506,006	265,294	240,713
1860.....	527,744	332,501	195,243
'61.....	588,533	363,261	225,271
'62.....	605,045	405,300	199,745
'63.....	612,363	469,427	142,937
'64.....	789,399	553,118	236,281
'65.....	865,640	660,700	204,940
'66.....	962,213	836,959	125,254
'67.....	1,071,468	977,680	93,788
'68.....	1,197,102	1,185,483	11,619
'69*	1,322,771	1,298,915	23,856
Totals	11,295,773	8,264,272	3,031,501
Total of expenses for construction, acquisition, and extension of the system			2,449,657
Surplus of receipts over expenses of all kinds for the whole period of twenty years			581,844

* The receipts and expenses for 1869 are not exactly known. The figures for this year are given approximately.

This table shows that the receipts have always sufficed to cover the expenditure, both of *personnel* and maintenance, and even to provide the capital required for the construction and extension of new lines, and their furnishing with all requisite appliances.

In supposing what is approximately exact, that the expense of establishing the lines at first has followed gradually upon the augmentation of the receipts, it can be admitted that the Government has received interest for the money expended, and now finds itself in possession of the whole telegraphic system without any charge upon the public treasury, and with a surplus of 581,844 frs.

The annual expenses consist of salaries of the *personnel*, maintenance of the lines, instruments and accessories.

These can be considered as forming approximately the equivalent of the expenses of private companies.

The last column of Table IV shows a rapid decrease of net product to a very low point in 1868, when it begins to recover.

The influence the modifications of tariff have had in producing this result requires to be carefully considered.

Telegraphic correspondence develops in virtue of the following causes :—

(a.) The augmentation of the number of offices, both for internal and foreign traffic, giving the utmost facility of access to the use of this means of correspondence.

(b.) The public become habituated to the use of the telegraph ; and it passes gradually from the exclusive domain of important affairs to every day transactions, and to relations purely social and private.

(c.) Lastly. The lowering of the tariff, in placing the facilities of telegraphy within the reach of the greatest number, gives to the movement an impulse in proportion to the importance of each reform.

The two first causes act in a manner very regular ; modified, however, by political and commercial circumstances, and these circumstances modify equally the first effects of the reform of tariff.

The annual expenses follow on their side an ascending progression, influenced by the following conditions :—

(d.) The increase in the number of offices ; the accession of new localities relatively unproductive ; the improvement of instruments ; increase of salaries, and, in general, all measures inevitable or favourable to the public, which do not directly lead to any increase of traffic.

(e.) The regular development of the means of correspondence, instruments, new wires, clerks, messengers, &c., &c., consequent

upon the gradual augmentation of the movement under the causes *a.* and *b.*

(*f.*) Lastly. The exceptional development of the means of correspondence to meet the demand consequent upon a reduced tariff, the third cause, *c*, referred to above.

In order to appreciate the result of these reforms it is necessary to eliminate in the series of annual movements the receipts and expenses which correspond to each year, resulting from the causes above named, *c* and *f*; or, in other words, *to calculate what would have been the result if the tariffs had remained unaltered.*

These can only be hypotheses, but the study of facts approach these hypotheses in reality as much as need be required.

In counting for each year the telegrams exchanged in Belgium, both local and foreign, it can be stated that their number follows without change of tariff a geometrical progression varying by reason of the circumstances already referred to. The mean of this progression is an annual increase of 12 per cent. to 13 per cent. during a period of fifteen years, upon the supposition that the tariff had remained the same and the circumstances had continued neither better nor worse.

A *normal* rate of *progression* is assumed equal to the mean for certain years, in which the progression was sometimes more and at other times less.

The first reduction of tariff dates from 1856. Until then the charges were high and regular, generally about 2 frs. 50 c. per zone, &c.

The development of traffic up to this time resulted for the most part from the establishment of telegraphic relationship with new countries, and the establishment of the principal offices in Belgium.

In order, then, to establish a regular law of development, and eliminate the influence of tariffs, it is necessary to take the year 1855 as the point of departure.

Modifications of tariff were frequent events after this period, but none of them affected all the branches of telegraphy at any one time. The normal rate of progression for each year can therefore be based upon the sum of the relations in which the tariff has not been changed.

In other words the effect of reduced tariffs and all exceptional development is eliminated from the years subsequent to 1855, and the assumption maintained that the tariffs and conditions remained unaltered; this gives variations in each year, but establishes an average rate of progression for the fourteen years of $12\frac{1}{2}$ per cent.

This is the only possible mode of valuation, and furnishes the following elements:—

TABLE V.—*Correspondence of Belgian Telegraph Offices of all kinds.*

Dates.	Number of Telegrams Exchanged.	Rate of Progression.		Number of Telegrams without Reduction of Tariff.
		Real.	Normal.	
1851	12,706	—	—	12,706
'52	19,910	56½	56½	19,910
'53	34,815	75	75	34,815
'54	46,211	33	33	46,211
'55	52,004	12½	12½	52,004
		50½	20	
1856	78,237	—	—	62,405
'57	89,801	15	0	62,405
'58	105,767	18	8	67,397
'59	149,245	41	31	88,290
'60	175,415	17½	13½	100,209
		21½	15	
1861	213,066	—	—	115,240
'62	235,209	10½	9	125,612
'63	351,003	49	12	140,685
'64	449,848	28	17	164,601
'65	584,854	30	13	185,999
		71	14	
1866	999,132	—	—	212,039
'67	1,156,570	16	6	224,761
'68	1,348,737	16½	6½	239,370
'69	1,534,413	14	10½	264,504
Totals	7,636,943	—	—	2,219,163

Under the reduced tariffs 7,636,943 telegrams have been transmitted in nineteen years.

Whereas only 2,219,163 could have been transmitted (which is *less than* one-third) if the tariff anterior to 1856 had been maintained. This is the most important result of the reform of tariff, even worthy of a great sacrifice.

The normal rate of progression being found, the same progression

for the receipts can be admitted approximately in the hypothesis of the same tariff being maintained.

It is not the same with the expenses. We have seen that there are inevitable causes which increase the expenses (*par. d*), and which are independent of the amount of correspondence.

On the other hand, the influence of the movement *e* and *f* ought not to take effect in proportion to the number of telegrams; in proportion as this number augments, the expense occasioned by this augmentation ought to tend to diminish the cost of the unit of work.

This benefit, resulting from a great quantity of operations, is less in telegraphy than in any industry. Telegrams must be trans-

TABLE VI.—*Table Indicating the Net Annual Products of the Working of Telegraphs Hypothesis of Maintaining the*

Dates.	1	2	3	4	5	6
	Receipts and Expenses of Telegraphs in the Kingdom of Belgium from the First Organisation of the Service up to 31st December, 1869.					
	Total Receipts Paid in to the Public Treasury.				Annual Expenses.	Net Products.
	Interior Service.	International Service.	Transit Service.	Total.	Expense of Staff and Maintenance.	
	frs.	frs.	frs.	frs.	frs.	frs.
1850-51	29,824	43,462	15,387	88,674	59,116	29,558
'52.....	31,747	64,749	69,476	165,973	56,162	109,810
'53.....	46,300	96,795	122,441	265,536	69,706	195,830
'54.....	53,025	128,352	99,468	280,845	89,796	191,049
'55.....	52,211	147,210	66,517	265,939	111,500	154,439
1856.....	71,286	179,663	108,630	359,579	132,288	227,291
'57.....	81,647	176,515	148,849	407,011	177,672	229,338
'58.....	89,314	187,162	137,449	413,926	219,391	194,535
'59.....	126,297	220,032	159,676	506,006	265,293	240,712
'60.....	142,344	232,877	152,521	527,743	332,500	195,242
1861.....	171,225	257,748	159,558	588,532	363,261	225,271
'62.....	176,643	280,449	147,952	605,044	405,300	199,744
'63.....	211,063	277,266	124,033	612,363	469,426	142,936
'64.....	282,591	307,956	198,850	789,399	553,118	236,281
'65.....	345,289	340,103	180,247	865,640	660,700	204,940
1866.....	407,532	369,900	184,780	962,213	836,958	125,254
'67.....	469,749	409,290	192,427	1,071,468	977,680	93,787
'68.....	549,263	424,138	223,700	1,197,102	1,185,483	11,619
'69.....	598,739	450,576	273,454	1,322,771	1,298,915	23,856
Totals	3,936,097	4,594,250	2,765,424	11,295,773	8,264,272	3,031,501

mitted one by one, and receive minute care. There is, however, in a great quantity, a certain benefit which must be taken into account.

In observing the series of expenses which have actually been produced, we obtain a simple enough comparison between the rate of progression of expenses and that of the augmentation of correspondence.

This comparative resemblance permits us to calculate *what would have been the economy if the total traffic had not been more than tripled by the reduction of the tariff.*

The series of expenses thus corrected figure in col. 12 of the following Table VI.

in Belgium, from Official Summaries; and the Valuation of these Products upon the First Tariffs without Reduction.

7	8	9	10	11	12	Dates.
Receipts and Expenses, Calculated upon the Hypothesis of the Maintenance of the Tariff prior to 1856.						
Rate of Supposed Normal Progression.	Receipts, Supposed, from Interior and International Service.	Receipts from Transit Service, without Modifications.	Total.	Annual Expenses, Supposed. Reduced Cost of Staff and Maintenance.	Net Products, Supposed.	
Per cent.	frs.	frs.	frs.	frs.	frs.	
—	73,287	15,387	88,674	59,116	29,558	1850-51
—	96,496	69,476	165,973	56,162	109,810	'52
—	143,095	122,441	265,536	69,706	195,830	'53
—	181,377	99,468	280,845	89,796	191,049	'54
—	199,422	66,517	265,939	111,500	154,439	'55
20	239,306	108,630	347,936	118,900	229,036	1856
0	239,306	148,849	388,155	154,600	233,555	'57
8	258,450	137,449	395,900	187,300	208,600	'58
31	338,570	159,676	498,246	219,300	278,946	'59
13½	384,277	152,521	536,799	275,900	260,899	'60
15	441,919	159,558	601,478	293,400	308,078	1861
9	481,692	147,952	629,644	327,100	302,544	'62
12	539,495	124,033	663,528	341,000	322,528	'63
17	631,209	198,850	830,060	395,200	434,860	'64
13	713,266	180,247	893,514	455,700	437,814	'65
14	813,123	184,780	997,904	497,400	500,504	1866
6	861,911	192,427	1,054,339	584,800	469,539	'67
6½	917,935	223,700	1,141,635	731,700	409,935	'68
10½	1,014,318	273,454	1,287,773	785,700	502,073	'69
—	8,568,463	2,765,424	11,333,888	5,754,281	5,579,606	

Cols. 2 to 6 show the receipts, expenses, and net products of the nineteen years such as they have been already given, but this table separates the interior telegrams from the international and transit service.

Col. 8 contains the receipts of the interior and international service upon the hypothesis of the tariff anterior to 1856 being maintained.

Until 1855 inclusive, the figures in this column are equal to the sum of cols. 1 and 2.

After 1856 each receipt is equal to that of the year preceding, with the addition of so much per cent. as is assumed to have been the rate of normal progression.

This rate is shown in col. 7. Col. 9 gives the receipts for transit telegrams, without modification, and they are added to the figures of the preceding column in order to furnish the complete column of supposed receipts, No. 10.

The supposed expenses in col. 11 being deducted, we obtain in col. 12 the supposed net product.

These products, identical with the real results until 1855, exceed them in 1856, by an insignificant amount, but go on always increasing, not by the increase of the total receipts which remain nearly the same, but by the less rapid progression of the expenses.

The total result since the origin gives us the following comparisons, the differences being spread over the fourteen years since 1856.

The total receipts are raised to 11,295,773 frs. They would have been without reduction of tariff 11,333,888 frs. That is, nearly equal.

The total expense of 8,264,272 frs. would have been reduced to 5,754,281 frs. upon the same hypothesis; and the net product, which has been 3,031,501 frs., would have risen to 5,579,607 frs.

These reductions of tariff have diminished the net product by the amount of 2,548,106 frs., which gives for each of the fourteen years a relative mean deficit of 182,000 frs. = 7,280*l.* per annum.

In calculating by a similar method what part of the expense of construction and extension of lines is attributable to the reduction of tariff, we consider this value to be 678,719 frs. (Report annexed C), that is to say, the capital expended was reduced from 2,449,657 frs. to 1,770,938 frs. Spread over fourteen years there was an average expenditure of 48,480 frs. which carries the annual relative deficit to 230,480 frs.

By this sacrifice there has been transmitted and received in Belgium during fourteen years an increase of 5,417,780 telegrams, or an average of 387,000 more per annum than under the old régime, which would only have given an average of 146,680 per annum during the same period. And it may even be doubted if

this latter increase would have continued under the high tariff which at the present day seems almost prohibitive.

INTERNATIONAL SERVICE CONSIDERED.

In order to complete the comparisons it is necessary to separate the interior from the international service, and take a new point of departure; the year 1860, which precedes the first uniform and reduced charge, gradually introduced by the tariff of 1·50 frs. per zone.

In each of the branches of traffic the number of telegrams and the total receipts are given exactly, but the valuation of the net product can only be obtained by an approximate division of the expenses amongst the several branches of traffic, *internal, international, and transit.*

The same agents, and often the same lines and same apparatus are used for the transmission of all the branches of the service.

The interior service comprises alone *two-thirds of the whole correspondence.* *It is for this service that the greater part of the lines are organised.*

All internal telegrams consist of two series of operations, one of departure, the other of arrival.

An international telegram has only one departure or one arrival.

A telegram in transit has only one reception and one re-expedition, without expense of clerk to receive or send by messenger to its destination.

Various methods have been tried to calculate the *units of work and of expense* corresponding to each kind of telegram; between the results obtained there have only been insignificant differences, and the mean is expressed in the most simple and practical manner by the following proportions:—

Interior telegram	5	units of expense.
International telegram	3	„
Transit „	2	„

In applying these co-efficients (vide annex D, Belgian report) to the given statistics of the last ten years, we obtain for the price of the interior telegram frs. 2·11, 1·92, and 1·97 respectively for the years 1860, 1861, and 1862. Then when the tariff for 20 words was reduced to 1·50 frs., the expense was reduced to 1·50, 1·35, and 1·27 in 1863, 1864, and 1865. After the first reduction of tariff to 1 fr., the expense fell to 90 c. in 1866, and to 86 c. in 1869, after the final reduction of tariff to 50 c.

The interior traffic produced then a deficit under the new tariff as with the preceding tariffs. We will see further on, *that compen-*

sation is obtained from the international and transit branches of the service.

The annual deficits of the internal service, such as are produced since 1860, can be valued as follows:—

TABLE VII.

Years.	Number of Telegrams.	Expenses.		Gross Receipts.	Annual Deficit.
		Per Telegram.	Total.		
		frs. c.	frs.	frs.	frs.
1860.....	80,216	2 11	169,260	142,345	26,915
1861.....	97,945	1 92	188,050	171,226	16,824
'62.....	105,274	1 97	207,390	176,643	30,747
'63.....	188,825	1 50	283,240	211,064	72,176
'64.....	252,301	1 35	340,610	282,592	58,018
'65.....	332,721	1 27	422,560	345,289	77,271
1866.....	692,536	— 90	623,280	407,532	215,748
'67.....	817,652	— 91	744,060	469,749	274,310
'68.....	972,038	— 92	894,270	549,263	345,007
'69.....	1,108,737	— 86	953,510	598,740	354,770
Totals	4,648,245	1 04	4,826,230	3,354,443	1,471,786

The progression of the annual deficit in the last column, Table VII, does not represent alone the effects of the reductions upon the internal traffic. These reductions in augmenting this movement, enormously *reduced the cost of the unit of work not only for interior but for all classes of correspondence.*

The benefit which international correspondence derives from this result ought for the most part to be carried to the reduction of the deficit debited to the interior service. This will be seen further on.

In the sequence of the cost of these ten years we see at first the mean of 1860 and 1861 maintain itself, rising a little in 1862. There was, in fact, during these three years, only a partial reduction of tariff applied to a small part of the traffic.

In 1863 the interior tariff is lowered from 1.50 frs. to 1 fr., and the cost is diminished one quarter. From this year the cost diminishes slightly until 1865, also in consequence of partial reforms in the international relations; but in 1866 a sudden decrease in the cost of working takes place, due to the last reduction of tariff for the interior, after which the mean is maintained with very little variation.

We ought then to admit that if all the tariffs were maintained the cost of working would remain the same, the inevitable increase of expenses being compensated by the economies which would result from the normal progression of the movement.

These points established, we can reconstitute approximately the traffic of the ten years such as it would have been under the tariffs of 1860, supposed to be maintained with both international and internal telegrams, a supposition which has already been applied to the whole of the operations. Table VI.

The progression, the receipts, and the expense of the interior service remain for the years 1860, 1861, and 1862 what they were in reality.

After 1st January, 1863, the date of the reduction of the tariff to 1 fr. from 1.50 frs., the progression and the receipts will be regulated by the normal rate which has already been established as the basis of comparison.

The expense of the interior telegrams will be maintained at 2 frs. per telegram, the exact mean of the price given, Table VII, for 1860 to 1862 inclusive.

These valuations are embraced in the following Tables, VIII, IX, and X.

TABLE VIII.—*Interior Traffic.*

Years.	Estimated Traffic, without the Reduction of Rates.			Estimated Annual Expenses.	Estimated Annual Deficits.	Excess of Real Deficits upon Estimated Deficits.
	Rates of Progression.	Number of Messages.	Receipts.			
			frs.	frs.	frs.	frs.
1860.....	—	80,216	142,345	169,260	26,915	—
1861.....	—	97,945	171,226	188,050	16,824	—
'62.....	—	105,274	176,643	207,390	30,747	—
'63.....	12	117,910	197,840	235,820	37,980	34,196
'64.....	17	137,957	231,470	275,900	44,430	13,588
'65.....	13	155,880	261,560	311,760	50,200	27,071
1866.....	14	177,700	298,180	355,400	57,220	158,528
'67.....	6	188,360	316,070	376,720	60,650	213,660
'68.....	6½	200,500	336,610	401,000	64,390	280,617
'69.....	10½	221,550	371,950	443,100	71,150	283,620
Totals....	—	1,483,292	2,503,894	2,964,400	460,506	1,011,280

We see that under the tariff of 1860 the interior telegraphy would have continued to produce an always-increasing deficit.

In order to appreciate the loss by the application of reduced tariffs, it is necessary to deduct from the loss placed to the debit of the interior service the amount gained by the international and transit services, in consequence of the reduced rate augmenting the number of interior messages, thereby reducing the cost of working upon all classes of messages.

Tables IX and X give these amounts :—

TABLE IX.—*International Traffic.*

1	2	3	4 5		6	7 8		9	10		
Years.	Number of Messages.	Gross Receipts.	Expenses.		Direct Profits.	Estimated Expenses.		Reduced Profits.	Differ- ences.		
			Per Message.	Total.		Per Message.	Total.				
		frs.	f.	c.	frs.	frs.	f.	c.	frs.	frs.	
1860....	95,199	232,877	1	27	120,900	111,977	1	27	120,900	111,977	—
1861....	115,121	257,748	1	15	132,390	125,358	1	15	132,390	125,358	—
'62....	129,935	280,449	1	18	153,320	127,129	1	18	153,320	127,129	—
'63....	162,178	277,266	—	90	145,960	131,306	1	07	173,530	103,736	27,570
'64....	197,547	307,956	—	81	160,010	147,946	1	01	199,520	108,436	39,510
'65....	252,133	340,104	—	76	191,620	148,484	1	01	254,650	85,454	63,030
1866....	306,596	360,900	—	54	165,560	204,340	—	90	275,940	93,960	110,380
'67....	338,918	409,291	—	55	186,400	222,891	1	02	345,700	63,591	159,300
'68....	376,699	424,139	—	55	207,180	216,959	1	05	395,530	28,609	188,350
'69....	425,676	450,577	—	51	217,090	233,487	—	97	412,910	37,667	195,820
Totals	2,400,002	3,350,307	—	70	1,680,430	1,669,877	1	02	2,464,390	885,917	783,960

TABLE X.—*Transmitted Traffic.*

Years.	Number of Messages.	Gross Receipts.	Expenses.		Direct Profits.	Estimated Expenses.		Reduced Profits.	Differ- ences.
			Per Message.	Total.		Per Message.	Total.		
1860....	50,404	frs. 152,522	c. 84	frs. 42,340	frs. 110,182	c. 84	frs. 42,340	frs. 110,182	frs. —
1861....	55,902	159,559	77	43,040	116,519	77	43,040	116,519	—
'62....	56,578	147,952	79	44,700	103,252	79	44,700	103,252	—
'63....	65,110	124,033	60	39,070	84,963	71	46,230	77,803	7,160
'64....	96,649	198,851	54	52,190	146,661	67	64,750	134,101	12,560
'65....	89,183	180,247	51	45,480	134,767	67	59,750	120,497	14,270
1866....	128,873	184,781	36	46,390	138,391	60	77,320	107,461	30,930
'67....	132,149	192,428	36	47,570	144,858	68	89,860	102,568	42,290
'68....	153,862	223,700	37	56,930	166,770	70	107,700	116,000	50,770
'69....	188,173	273,455	34	63,980	209,475	65	122,310	151,145	58,330
Totals	1,016,883	1,837,528	47½	481,690	1,355,838	68	698,000	1,139,528	216,310

The cols. 1 to 6 present the results of the international and transit traffic, with the profits they have realised after spreading the expense of working such as has been given for the interior service over all classes of telegrams.

Col. 7 gives the series of prices of each telegram upon the hypothesis of the interior tariff being maintained alone. Without the interior reforms the international and transit traffic would not have benefited by the considerable augmentation of the number of units of work, and they would have cost the administration more.

This gives (col. 8) a series of supposed expenses which, deducted from the effective receipts, gives (col. 9) the reduced profit. This latter, deducted from the real profit, leaves (col. 10) *the part of the profit which could not have been realised if the interior reforms had not taken place.*

It is necessary, then, to carry to the credit of the internal service this sum of 783,960 frs., which has been added in seven years to the benefit of the international branch by the reforms of the interior branch, and to this must be added the sum of 216,310 frs., the benefit which the transit service has derived from the same source giving a total of 1,000,270 frs.

This sum will compensate within a few thousand francs the sum found in Table VIII, as representing the direct augmentation of the deficits of the internal service in consequence of the reductions of tariffs.

But, in order to be more exact, it is necessary to consider a contrary reaction, that is, the effect produced by the reductions of the international tariffs upon the lowering the unit of expense applied to the internal movement. If these reductions had not taken place we find that the mean return of the price of interior telegrams reproduced in the second column of the following Table XI, conformably to Table VII, would have been a little increased, such as we see it in col. 3. The difference in col. 4 being applied to the real number of interior telegrams indicates how much this part of the traffic owes to the augmentation of correspondence with foreigners resulting from the successive reforms of the international tariff.

TABLE XI.

Years.	Mean Cost of Internal Telegrams.		Differences.	Number of Telegrams in the Interior.	Result of the Reduction of International Tariffs.
	Actual.	Supposing the International Tariffs Maintained.			
	frs. c.	frs. c.	c.		frs.
1863	1 50	1 55	05	188,825	9,441
'64	1 35	1 40	05	252,301	14,615
'65	1 27	1 33	06	332,721	19,963
'66	— 90	— 93	03	692,536	20,776
'67	— 91	— 94	03	817,652	24,529
'68	— 92	— 95	03	972,038	29,161
'69	— 86	— 89	03	1,108,737	33,262
Total	—	—	—	—	149,747

This sum being deducted from 1,000,270 frs., there remain 850,523 frs. to deduct from the increased deficit of Table VIII, this leaves 160,757 frs. as the approximate loss in seven years in consequence of all the internal reforms.

Résumé.

In 1862, with a tariff of fr. 1.50 for all Belgium, there were 105,274 telegrams for the interior.

The expense exceeded the receipts by 30,747 frs., and this deficit was destined to increase year by year (see Table VIII), each telegram costing 2 frs., whereas it only received a mean of about 1.70 fr.

The tariff is reduced in 1863 to 1 fr., and to 50 c. in December, 1865.

There followed such a development of correspondence that, in 1869, the number of telegrams exceed *tenfold the number in 1862*.

During the same time the total receipts of the interior, which in 1862 were 176,643 frs., increased to 598,740 frs. in 1869.

The expense follows a progression equally rapid, but the whole cost to the public treasury for the increase of the traffic tenfold in *seven years* remains at 160,757 frs. = 6,430*l.*

This difference cannot alone explain the diminution of the net product as given in the last column of Table IV; there must be some additional loss upon the international correspondence, and by applying the same series of deductions to this class of traffic as have already been applied to the internal correspondence, we arrive at a further loss of benefit by the reduction of the tariff upon international correspondence.

Table IX indicates the benefits resulting from the division of the expenses in proportion to the work done.

This rises to 1,669,877 frs. for the last ten years.
The following summary indicates what would have been produced in this branch of traffic if the tariff of 1860 had been maintained.

TABLE XII.

Years.	Estimated International Traffic without the Reduction of Tariffs.			Estimated Annual Expenses.	Estimated Annual Profits.	Actual Net Receipts, Table IX, Col. 6.	Annual Reduction of Profits.
	Rates of Pro-gression.	Number of Messages.	Receipts.				
1860....	— 15	95,199	frs. 232,877	frs. 120,900	frs. 111,977	frs. 111,977	frs. —
1861....	— 9	109,480	267,810	139,040	128,770	125,358	3,412
'62....	— 12	119,330	291,910	151,550	140,360	127,129	13,231
'63....	— 17	133,650	326,940	169,740	157,200	131,306	25,894
'64....	— 13	156,370	382,520	198,590	183,930	147,946	35,984
'65....	— 14	176,700	432,250	224,410	207,840	148,484	59,356
1866....	— 6	201,440	492,760	255,830	236,930	204,340	32,590
'67....	— 6½	213,530	522,330	271,180	251,150	222,891	28,259
'68....	— 10½	227,410	556,280	288,810	267,470	216,959	50,511
'69....	—	251,290	614,690	319,140	295,550	233,487	62,063
Totals	—	1,684,399	4,120,367	2,139,190	1,981,177	1,669,877	311,300

This table assumes the cost of each international telegram to remain as it was in 1860, at 1·27 frs., and to be maintained during the whole ten years ; the conditions as to tariff remaining the same for *all branches of traffic*, and the increase of necessary expenses compensating for the advantage of the normal increase of correspondence.

The last column of Table XII does not furnish the exact diminution of the net receipts resulting from the reduction of the international tariffs. This relative loss ought to be augmented by the effect of the reaction produced by the reforms of the interior service (Table IX, last column), and diminished by the favourable effect reciprocally produced by the development of the international correspondence upon the results of the interior service. (Table XI.)

This gives for the last nine years the following losses :—

TABLE XIII.

Years.	Reduction of Direct Profits (Table XII).	To be Added as the Effect of the Interior Tariff (Table IX).	To be Deducted as the Effect of the International Tariff (Table XI).	Balance Due to the International Traffic.
	frs.	frs.	frs.	frs.
1861	3,412	—	2,938	474
'62	13,231	—	4,211	9,020
'63	25,894	27,570	9,441	44,023
'64	35,984	39,510	12,615	62,879
'65	59,356	63,030	19,963	102,423
1866	32,590	110,380	20,776	122,194
'67	28,259	159,300	24,529	163,030
'68	50,511	188,350	29,161	209,700
'69	62,063	195,820	33,262	224,621
Totals	311,300	783,960	156,896	938,364

We see that there is in the international traffic some diminution in the benefits, which increases relatively to what would have been the result had the tariff of 1860 been maintained, and that these diminutions increase in nine years to 938,364 frs.

This loss, added to 160,757 frs. the loss on the internal service, gives the sum of 1,099,121 frs. to deduct from the net product of the last nine years.

The total of the net profits for 1861 to 1869 inclusive is 1,263,693 frs.

In multiplying by 9, the maximum annual receipts before this period, which was 240,712 frs. in 1859, the product is 2,166,415 frs., and exceeds the real product only by the sum of 902,722 frs. This is, as already said, upon the hypothesis of the nominal progression at the higher tariff equalling only the inevitable increase of expense.

It cannot be doubted that the increase would at least have equalled this amount, and there is every probability that it would have considerably exceeded this, incontestably proving that a diminution of tariff never can produce the same amount of revenue as a higher tariff.

M. Jamar then argues that either his hypothesis exaggerates by one-tenth the losses resulting from the reduction of tariff, or (which is probable) that the net profits would have been the same without any reduction of tariff.

Either alternative can be adopted without altering the value of the following conclusions.

RESULTS FROM THE FOREGOING TABLES.

The net product of the Belgian telegraphic system has been diminishing for several years, and was reduced to a point at which there was scarcely any profit in 1868.

Nine-tenths of this ought to be attributed to the successive reductions of the tariff upon international telegrams, and the remainder to the reduction upon interior telegrams.

It is true that the interior service, considered separately, produced a deficit before the reforms of 1863 and 1865. These reforms have slightly augmented the deficit, but this augmentation is only 160,750 frs. for seven years.

It is equally true that the international service has always given a benefit, but the successive reductions of tariff with foreign countries have reduced this profit 938,300 frs. in nine years as compared with what would have been the result had the tariff of 1860 been maintained.

On this supposition there would have been, from 1863 to 1869 inclusive, 1,199,850 interior telegrams. The reduced tariffs have given 4,364,810; that is, 3,164,960 more in seven years, or 452,000 per annum. For this quadruple movement the public have to pay with the sacrifice of 160,750 frs.

By the same reasoning there have been from 1861 to 1869 inclusive, 1,589,200 telegrams exchanged between Belgium and foreign countries. The reduced tariff has increased this to 2,304,803, an increase of 715,603 in nine years, or 79,510 per annum. This augmentation of 45 per cent. has diminished the receipts by the amount of 938,300 frs.

There is, then, an enormous difference in the results of reduced tariffs upon *internal* correspondence as compared with *external* correspondence, and if we examine separately the effects produced by international relations, even the most intimate, we shall see that the confirmation of this difference is easy to find.

In dividing the telegraphic correspondence according to its nature, we find:—

	Telegraphic Correspondences.		
	Interior.	International.	Total.
Messages of Governments and of diplo- matic offices	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$
(Money Market) Stock Exchange, news, &c.	5	$12\frac{1}{2}$	$8\frac{3}{4}$
Commercial transactions	34	$56\frac{1}{4}$	45
Private and family relations.....	$59\frac{1}{2}$	$28\frac{1}{4}$	44
Newspaper telegrams	1	$2\frac{1}{4}$	$1\frac{3}{4}$
	100	100	100

Contrary to the general supposition, the correspondence of the Government, the affairs of the Bourse and news for the press, far from constituting the principal object of telegrams, are only 11 per

cent. of the total, $6\frac{1}{2}$ per cent. for the interior, and $15\frac{1}{2}$ per cent. for international service.

The lines are occupied nine-tenths of the time by two principal currents. There is a more or less eager demand for the use of the telegraph for commercial affairs, according to the variations of political or financial conditions.

The relations of social and family life gradually become more and more accustomed to the use of the telegraph, owing to the reduction of tariff bringing it within the scope of classes with moderate incomes, and engaged in small transactions.

As may be imagined these two currents of correspondence are not of equal importance within the limits of a country and outside those limits.

Social and family relations are never so numerous outside the frontier of any country.

They are only $28\frac{1}{4}$ per cent. in the international correspondence, while they constitute $59\frac{1}{2}$ per cent. of the internal traffic.

In compensation, however, the commercial telegrams absorb $56\frac{1}{4}$ per cent. of international correspondence, and 34 per cent. only of the interior.

Before the reduction of tariff, the proportion of internal correspondence was the same, but the proportion of commercial correspondence was 63 per cent. of the international movement; more, therefore, than it became with a reduced tariff.

It is thus evident that this class of correspondence follows above all, in its movement, the fluctuations of commerce, and is only influenced in a secondary degree by the alteration of tariff.

And as commercial affairs constitute the principal object of international correspondence, we cannot hope to increase these relations by any tariff cheap enough to augment the correspondence to anything resembling the increase of telegraphy within the State.

The benefit must be much less since there are so few people to profit by it.

It must cost more because no similar augmentation can take place to reduce the the expense of working, such as we see in relation to the internal correspondence.

Résumé.

In summarising under form of principles the result of experience, such as the foregoing pages have analysed, we consider as demonstrated :—

1st. *That a reduction of tariff leads to a diminution of the net product, even under the most favourable conditions known.*

2nd. *That the interior service already producing a deficit before the last reduction of tariff, has obtained by these reductions an enormous*

increase of correspondence, with, however, a slight augmentation of the deficit.

3rd. *That the international service, which has always given a profit, has realised under similar conditions a development of correspondence, much less, and a diminution of benefit much greater than has resulted to the internal service.*

4th. *With the interior correspondence the deficit tends to diminish, while with the international correspondence the diminution of benefit tends to increase.*

From these facts Belgium assumes, that the motives of public interest which determine a reduction of tariff for internal service, are not those generally applicable to the international service; and he suggests that the tariff should be continued unaltered until the natural increase of traffic has swelled the receipts to a sufficient amount to recoup the expenditure.

We will now consider how far the traffic of the different private telegraph companies is affected by the foregoing principles.

ATLANTIC TELEGRAPHY.

There are many and sufficient reasons which render it inexpedient on my part to publish all the details of private companies which are open to me, and have been well considered with the desire to find material of some practical value for this paper.

It must be sufficient for the present to prove that even under the most favourable conditions for *international* telegraphy the world can produce there is no exception to the rule, "That a reduction of tariff leads to a diminution of the net product."

	£
The actual earnings of the Atlantic Telegraph Companies from } 28th July, 1866, to 31st December, 1871, were	2,171,000
Assuming the tariff to have remained at 12'84 <i>l.</i> (the mean for the } first eleven months), and the traffic to have increased annually } at the rate of 12½ per cent., the gross earnings would have } amounted to	2,518,000
Difference in favour of 12'84 <i>l.</i> tariff	347,000
Add—Expenses which would not have been incurred	97,000
Total	444,000

The Duration of the Different Tariffs was as follows:

£	s.	d.		
20	—	—	28th July to 31st October, 1866	= 3 months 4 days.
10	—	—	1st November, 1866, to 30th November, 1867	„ 1 year 1 month.
5	5	—	1st December, 1867, to 31st August, 1868	„ 9 months.
3	7	6	1st September, 1868, to 31st May, 1869	„ 9 „
2	—	—	1st June, 1869, to 9th August, 1869	„ 2 months 9 days.
1	10	—	10th August, 1869, to 11th December, 1870	„ 1 year 4 months.
3	—	—	12th December, 1870, to 30th June, 1871	„ 6 months 19 days.
2	—	—	1st July, 1871, to 31st January, 1872	„ 7 months.

The above statement assumes the mean tariff for the first twelve months to be maintained, and $12\frac{1}{2}$ per cent. as the normal rate of increase of traffic for each year, an increase which would only have produced an average of 114 messages per day for the year ending December, 1871, less than one-fourth of the real traffic, and a number so low that no one can suppose it would not have been attained even with the tariff at 20*l.*

Could the high tariff have been maintained one cable would have sufficed for the limited traffic, all the capital and working expenses of the French Atlantic Cable would have been saved, and the Anglo-American Company would now be enjoying 27 per cent. dividend upon a capital of 1,675,000*l.*

If, then, this small number of messages would have yielded a larger revenue than the greater number with the series of reduced tariffs given above, it follows that some other motives than cheapness must prevail to induce any private company to reduce their tariff.

These motives have hitherto been expediency, competition, and the attempt to combine and stave off further opposition; and we shall probably see reproduced the experience of the competing land lines in this country already referred to, “*One or more will be ruined or forced to amalgamate; higher tariffs will be resorted to in order to preserve good dividends with a large reserve, and further extensions will be avoided.*”

	£
We have already three Atlantic cables laid and in good working order, represented by a capital of.....	3,675,000
There are two additional cables projected, one to be laid by the French Atlantic Company at a cost of 900,000 <i>l.</i> , and another by the Great Western Telegraph Company, whose capital is 1,350,000 <i>l.</i> , making together	2,250,000
Total	<u>5,925,000</u>

The revenue earned by the Atlantic cables, including the Newfoundland Company’s proportion, amounted, as far as can be ascertained from the published accounts of the companies for the year 1871, to 610,000*l.* During the first six months of that year a 3*l.* tariff was in force, and during the last six months 2*l.* was charged. Taking the mean rate of 2*l.* 10*s.* we can assume that 245,000 messages were sent.

From existing data we can say that the normal increase of traffic may be estimated at 25 per cent., which would give a total of 306,250 messages for the current year, and 382,812 for 1873.

The effect of lowering the tariff from 2*l.* to 1*l.* will probably be to increase the number of messages 75 per cent. in the first year after the reduction.

As the two new cables cannot be laid until after the lapse of the first six months of next year, we may estimate—

	£
The number of messages for the June half-year of 1873 at 191,406; } these at a 2 <i>l.</i> tariff will give a revenue of..... }	382,812
Upon the assumption of a 1 <i>l.</i> tariff increasing the traffic 75 per cent., } the number of messages for the second half of 1873 would be } 334,960, and the total revenue for the six months	334,960
Together	<u>717,772</u>

Estimating the expenses attending the working of the five cables at 110,000*l.* per annum, the balance of revenue for 1873 would yield upon the gross capital about 10 per cent. for dividend and reserve.

But for 1874, supposing the regular increase of traffic to be 25 per cent. upon the number of messages sent in 1873, the total revenue at a 1*l.* tariff would only be 657,957*l.*, and this less working charges would return on the gross capital 9 per cent. for dividend, reserve, and repairs.

I must, however, state that this is probably the worst view of the case as regards the traffic—what may be required for repairs, and how much wasted upon competition, I need not now consider.

Better results might be shown if the traffic of the last two years were alone referred to, but we cannot always rely upon Alabama disputes and Erie Ring contests; and in calculating the probable results of the next few years, we may reasonably expect that there will be one year at least without much, if any, increase.

There are fluctuations in the commercial world which it would be folly to ignore, and I give the above figures as the minimum which may safely be anticipated; but who can say what the maximum would be if it were sought to establish *only a self-supporting instead of a dividend-earning system.*

We must, however, at once discard all idea of ever making the tariff so low as it is for interior telegrams, the local relations do not exist to any extent requiring an outlay of even 10*s.* for a telegram. No one can order his dinner by telegram. The small tradesmen in the suburbs and provincial towns cannot order their daily or weekly supply of goods by telegram. All the questions of minor importance relating to the inner life of a nation have no equivalent outside the limits of any country.

But still it cannot be disputed that Atlantic telegraphy under a self-supporting tariff, would within ten years require several additional cables. The interchange upon a grand scale of the products of the old and new world. The intimate political relations with this country, possessing as we do a great dominion extending from the Atlantic to the Pacific Ocean Islands, besides islands

so unreliable that there were frequent complaints of letters reaching their destination sooner than telegrams, which were often unintelligible when they did arrive.

The uncertainty of telegrams being sent in their order, or of arriving at all, was loudly complained of, and yet we find a decided tendency to increase.

The year 1867 shows a slight decrease, but it has nothing to do with tariff; there was no change in that.

1868 gives 13·55 per cent. increase, and gross receipts amounting to 208,344*l.*

The tariff is then lowered at the instigation of the Telegraphic Convention, urged upon the principle that the benefit to the public would be very great.

The effect of lowering the tariff from 5*l.* 1*s.* to 2*l.* 17*s.* was to increase the number of messages 34 per cent., and to decrease the gross revenue 32 per cent.

At this point in March, 1870, two efficient telegraph lines were opened from England to India; both of them (with only a few interruptions, never occurring at the same time) have carried this class of correspondence, in popular phrase, “quicker than the sun “itself,” and it is acknowledged that this element increases international telegraphy more than any other.

A large part of the increase subsequent to that date must, therefore, be attributed to these new facilities; and as a proof of this, I may relate some efforts made to augment correspondence; we expended thousands of pounds in advertising and in communicating with everyone likely to have any commercial or social relations in the East.

We tried to enlist the press, and gave telegrams of public interest for half price to Mr. Reuter.

We employed boats to go on board every steamer at Gibraltar, Malta, Suez, and Aden, and it is on record, as a matter of experience, that we did not get 2 per cent. of social messages from all our efforts in the first direction named; we found that India could not supply Mr. Reuter with a telegram every day worth publishing. Somebody had gone to the hills, or somebody was leaving Madras and going somewhere else, formed the class of telegrams sent from India, and nobody wanted them, nor did we, by employing boats to visit ships with passengers voyaging to and from all parts of the East, obtain six messages in the six months.

During the great continental war we were eagerly sought to give news to Gibraltar, Malta, Egypt, Aden, and the Mauritius; but as the killed and wounded diminished, the thirst for telegrams subsided, and I do not think they would have given us quarter rates for a daily telegram.

I make these statements as further confirming the principle *that the social relations which exist outside the limits of a country do not give any appreciable addition to telegraphic correspondence*; questions of urgency, for which even 20s. would be expended, are not frequent, and these questions are more apt to be nearer home than several thousand miles away.

It must be accepted as a feature of telegraphic correspondence *that commerce gives at least 90 per cent. of all international telegrams*, where the countries are remote.

Belgium we have seen at the end of my extract gives 63 per cent. for international commercial telegrams before the tariff was lowered, and 56 per cent. after it was lowered, that is more in proportion with a high than with a low tariff, proving that tariff only affects this class of correspondence in a secondary degree.

We find, then, that these new routes to India, the Indo-European, and British-Indian Submarine, increased the correspondence 42 per cent., bringing it up to nearly double the amount it had attained in its best year under the higher tariff of 5*l.* 1s., but this double number of telegrams, "carried quicker than the sun," at a tariff of 2*l.* 17s., only produced 18,000*l.* more than the old slow and unreliable line at the high tariff of 5*l.* 1s.

The result of this competition was that the Turkish line was losing upwards of 20,000*l.* per annum, the Indo-European line was not paying, and the British-Indian line was earning a meagre 5 per cent. for the purposes of dividend, reserve, and maintenance.

Early in 1871 the tariff was increased to 4*l.* 10s., and the effect of this increase was not to diminish the traffic, but with the same traffic to increase the revenue 48 per cent.

It may be argued that the increase of tariff stopped the immediate increase of traffic, but that cannot in justice be affirmed. The great continental war suspended many commercial operations, numerous engagements of tonnage and orders for goods were cancelled, and for many months transactions were limited to those bearing the minimum of risk.

The experience, then, of Indian traffic confirms all the foregoing principles, and it follows that, if we are to have a low tariff, calculated to stimulate this class of correspondence, increase commercial activity, and make telegraphy more a habit of the people in India, it must be done at a sacrifice of dividends at least, and these are for the present at as low a point as private investors will encourage.

We propose from the first of next month to reduce the tariff from 4*l.* 10s. to 4*l.*, and there is a hope that the traffic will be elastic enough to recoup within the first year the loss from this moderate reduction. Government alone can afford to bring the tariff to 3*l.*, a

tariff which would keep the lines self-supporting, and provide for the extensions which the certain increase of commercial activity from this cause alone would demand.

It should not be lost sight of that, while a very low tariff would unquestionably increase the correspondence considerably, it would also necessitate the addition of more lines, which over so great a distance can never be done without a large expenditure of capital; and as it is proved that this class of correspondence is principally commercial, it must be kept self-supporting at least, even if controlled by Government, or taxpayers may well object to share a burden so specially advantageous to the commercial classes, and only in a secondary degree of general benefit to the whole community, nothing more than a gradual and moderate reduction below 3*l.* for twenty words, even under Government control, could, therefore, be anticipated.

It is proper here to call attention to what India has already done, and what they appear to be sacrificing in the interests of telegraphy.

The following table shows that India, in the year 1869, exchanged fewer telegrams of all kinds than Turkey or Roumania, and very few in excess of Denmark, and taking the statement published by the International Telegraph Office of Berne, as I find it, they appear to lose upon every telegram 4*s.* 6 $\frac{3}{4}$ *d.*

TABLE XIV.—*Statement of the Average Cost, Product, Profit, and Loss per Telegram for 1869.*

States.	Number of Messages for 1869.				Total Working Expenses for 1869.
	Internal.	International.	Service.	Total.	
					£
Austria and Hungary	2,807,958	1,281,796	146,035	4,235,789	280,457
Baden	126,429	481,765	289,884	898,078	13,996
Bavaria	262,649	596,056	—	858,705	21,866
Belgium	1,108,737	613,849	315,722	2,038,308	51,957
Denmark	186,979	222,188	10,453	419,620	18,044
France	4,729,588	1,579,717	—	6,309,305	413,320
Germany (North) ...	4,028,764	2,168,274	69,460	6,266,498	335,399
Great Britain, India*	481,824	40,852	—	522,676	264,070
Greece	96,213	13,335	3,260	112,808	15,506
Holland	949,562	682,490	11,338	1,643,390	62,181
Italy	1,643,147	693,309	71,407	2,407,863	158,608
Norway	266,163	140,965	21,977	429,105	26,874
Roumania	434,590	162,450	1,076	598,116	55,007
Russia	1,886,849	391,743	120,818	2,399,410	330,041
Spain	742,087	252,280	78,084	1,072,451	137,001
States of the Church	40,250	68,639	2,296	111,185	5,613
Sweden	384,128	211,833	702,551	1,298,512	40,356
Switzerland	951,337	418,087	24,592	1,394,016	36,924
Turkey	476,342	194,978	—	671,320	151,163

* India—these figures are approximately exact; the financial year terminating in March, all accounts are made up to that date.

TABLE XIV.—*Cost, Product, Profit and Loss per Telegram—Contd.*

States.	Average Cost per Telegram for 1869.		Total Receipts for 1869.	Average Product per Telegram for 1869.		Average Profit per Telegram.		Average Loss per Telegram.	
	s.	d.	£	s.	d.	s.	d.	s.	d.
Austria and Hungary	1	3 $\frac{3}{4}$	292,409	1	4 $\frac{1}{2}$	—	— $\frac{3}{4}$	—	—
Baden	—	3 $\frac{1}{2}$	15,122	—	4	—	— $\frac{1}{2}$	—	—
Bavaria	—	6	35,213	—	9 $\frac{3}{4}$	—	3 $\frac{3}{4}$	—	—
Belgium	—	6	52,943	—	6 $\frac{1}{4}$	—	— $\frac{1}{4}$	—	—
Denmark	—	10 $\frac{1}{4}$	16,331	—	9 $\frac{1}{4}$	—	—	—	1
France	1	3 $\frac{1}{2}$	426,264	1	4	—	— $\frac{1}{2}$	—	—
Germany (North) ...	1	— $\frac{3}{4}$	307,897	—	11 $\frac{3}{4}$	—	—	—	1
Great Britain, India*	10	1 $\frac{1}{4}$	145,042	5	6 $\frac{1}{2}$	—	—	4	6 $\frac{3}{4}$
Greece	2	8 $\frac{3}{4}$	5,970	1	— $\frac{1}{2}$	—	—	1	8 $\frac{1}{4}$
Holland.....	—	9	46,300	—	6 $\frac{3}{4}$	—	—	—	2 $\frac{1}{4}$
Italy	1	3 $\frac{3}{4}$	188,736	1	6 $\frac{3}{4}$	—	3	—	—
Norway.....	1	3	27,601	1	3 $\frac{1}{4}$	—	— $\frac{1}{4}$	—	—
Roumania.....	1	10	41,866	1	4 $\frac{3}{4}$	—	—	—	5 $\frac{1}{4}$
Russia	2	9	492,628	4	1 $\frac{1}{4}$	1	4 $\frac{1}{4}$	—	—
Spain.....	2	6 $\frac{1}{2}$	70,639	1	3 $\frac{3}{4}$	—	—	1	2 $\frac{3}{4}$
States of the Church	1	—	4,712	—	10	—	—	—	2
Sweden	—	7 $\frac{1}{4}$	49,306	—	9	—	1 $\frac{3}{4}$	—	—
Switzerland	—	6 $\frac{1}{4}$	42,134	—	7 $\frac{1}{4}$	—	1	—	—
Turkey	4	6	209,601	6	2 $\frac{3}{4}$	1	8 $\frac{3}{4}$	—	—

* India—these figures are approximately exact; the financial year terminating in March, all accounts are made up to that date.

I do not know whether the telegraph department in India credits itself with a charge upon all Government and political telegrams; if not, then the figures given do not in my opinion give full justice to the department. Belgium, Switzerland, and some other countries debit their Government as they do the public; in some cases, however, only at half-rates, but it is obvious that the capital expended upon any system should be credited with whatever benefits it yields, either of service to the State or service to the public.

From this enormous loss, then, there should be deducted some amount representing the sum the country would gladly pay in money for the facilities of governing so vast a territory with 150,000,000 of inhabitants, so much under military control. There will, no doubt, be great sums saved annually in the movement of troops—more concentration, security, and economy entirely indebted to telegraphy, and therefore a direct gain to the State.

But, assuming that the number of telegrams given in the preceding table represent the money-earning telegrams, and therefore

the service rendered to the commercial public, it is at best a beggarly account for so great a territory, and can only be accounted for by the two following causes:—

The uncommercial habits of the people; and

The tariff being so high in relation to the magnitude of the transactions common to the natives, having more resemblance to the amount paid in this country for international telegrams than to the amount common to this and every other nation for internal correspondence.

It is established that a reduction of tariff for interior traffic has, nearly in every instance, produced an enormous increase of traffic, with only a slight increase in the deficit of the net product.

And that this deficit upon internal correspondence tends to diminish.

The statement which follows shows what the telegraphic system has cost the various States, from the earliest to the latest available data, proving that most countries think it worth a considerable sacrifice to obtain a telegraphic communication.

TABLE XV.—*Statement showing the Total Expenses, Receipts, Profit and Loss, and Average Yearly Profit and Loss, from Commencement of Lines to 1869.*

States.	Date from	Expenses.			Receipts.	Loss.		Profit.	
		Working to 1869.	Establishment to 1869.	Total to 1869.		Total to 1869.	Average Yearly.	Total to 1869.	Average Yearly.
		£	£	£	£	£	£	£	£
Austria and Hungary }	1849	2,691,744	850,477	3,542,221	2,855,671	686,550	32,692	—	—
Baden	'51	125,296	40,790	166,086	133,606	32,480	1,709	—	—
Bavaria	'51	292,636	142,253	434,889	348,525	86,364	4,478	—	—
Belgium	'50	330,562	97,186	427,748	451,863	—	—	24,115	1,204
Denmark	'54	217,496	137,665	355,161	248,688	106,462	6,653	—	—
Germany (North) }	'49	2,198,785	759,674	2,958,459	2,532,409	426,049	20,288	—	—
Holland	'52	472,164	193,658	665,822	489,965	175,897	9,772	—	—
Italy	'62	1,402,214	104,056	1,506,270	1,265,386	240,884	30,110	—	—
Norway	'55	257,462	184,859	442,321	213,718	228,603	15,240	—	—
Russia	'56	2,769,442	1,064,425	3,833,867	3,116,750	717,157	51,222	—	—
Spain	'55	1,787,988	195,358	1,983,346	724,554	1,258,792	83,919	—	—
Sweden	'53	416,828	268,324	685,152	717,143	—	—	31,991	1,881
Switzerland....	'52	320,138	66,741	386,879	393,144	—	—	6,265	348

TABLE XVI.—*Statement showing the Total Number of Telegrams from the Opening of the Lines.*

States.	1849.	1850.	1851.	1852.	1853.	1854.
Austria and Hungary	8,593	14,398	56,164	84,888	146,560	231,165
Baden	—	—	4,148	12,460	37,591	41,346
Bavaria	—	2,404	6,228	15,527	24,726	61,117
Belgium	—	—	19,686	41,509	76,312	95,096
Denmark	—	—	—	—	—	20,043
France	—	—	9,014	48,105	142,061	236,018
Germany	—	35,494	40,065	48,751	85,161	115,481
Holland.....	—	—	—	1,369	45,738	104,655
Norway.....	—	—	—	—	—	1,858
States of the Church	—	—	—	—	173	730
Sweden	—	—	—	—	851	10,534
Switzerland	—	—	—	2,876	84,832	132,340
Wurtemberg	—	—	—	—	41,385	40,112

States.	1855.	1856.	1857.	1858.	1859.
Austria and Hungary	269,504	342,526	396,503	463,950	728,219
Baden	51,067	67,304	63,815	77,361	112,671
Bavaria	85,457	153,581	128,147	142,497	216,382
Belgium	107,582	142,939	178,621	217,784	276,979
Denmark	46,443	51,871	110,856	104,400	119,253
France	254,532	360,299	413,616	463,973	817,473
Germany	166,935	248,905	277,870	289,831	513,129
Greece	—	—	—	—	5,493
Holland.....	143,780	194,565	228,964	266,992	391,613
Norway.....	32,918	68,020	83,011	97,174	124,353
Portugal	—	—	13,945	39,500	52,000
Russia	—	150,417	170,210	205,515	301,711
Spain.....	2,930	6,438	42,560	162,994	281,451
States of the Church	11,996	22,685	30,423	39,523	48,490
Sweden	60,611	116,673	174,864	180,364	181,119
Switzerland	166,541	232,067	265,365	252,800	293,746
Wurtemberg	41,451	63,978	56,131	71,628	96,207

States.	1860.	1861.	1862.	1863.	1864.
Austria and Hungary	727,274	919,789	1,021,612	1,105,501	1,692,610
Baden	128,670	148,350	182,246	226,655	307,399
Bavaria	205,450	230,192	265,768	319,408	396,581
Belgium	329,351	405,364	410,045	537,605	726,692
Denmark	152,381	197,417	203,150	238,634	170,210
France	977,281	1,268,459	1,976,144	1,895,930	2,694,361
Germany	623,325	741,085	967,321	1,222,692	1,767,679
Great Britain { Indo-European	—	—	—	—	256
{ Indian	—	—	—	—	—
Greece	19,813	29,664	47,027	57,409	62,513
Holland.....	419,130	488,005	535,733	662,567	807,811
Norway.....	142,875	135,561	146,101	181,697	216,158
Portugal	62,000	73,500	85,500	93,000	104,000
Roumania.....	—	—	—	297,810	310,045
Russia	465,027	627,061	714,919	816,983	927,358
Spain.....	316,165	348,022	536,279	605,588	819,952
States of the Church	45,982	36,255	42,316	63,844	58,180
Sweden	173,231	185,398	483,419	689,142	759,934
Switzerland	312,256	340,907	392,142	468,894	527,939
Wurtemberg	106,122	148,826	175,426	197,454	268,130

TABLE XVI.—*Number of Telegrams from the Opening of the Lines—Contd*

States.	1865.*	1866.	1867.	1868.*	1869.
Austria and Hungary	1,899,808	2,658,089	2,914,904	3,259,273	4,235,789
Baden	396,367	499,701	589,647	630,959	898,078
Bavaria	490,935	605,403	756,049	709,284	858,705
Belgium	938,467	1,439,842	1,650,159	1,823,080	2,038,308
Denmark	203,208	237,867	315,892	357,397	419,620
France	3,107,394	4,330,791	4,645,604	5,029,245	6,309,305
Germany	2,197,090	2,806,216	4,379,777	5,560,947	6,266,498
Great { Indo-European	23,433	29,246	29,064	33,005	46,389
Britain { Indian	—	—	—	—	522,676
Greece	85,457	102,870	106,435	101,837	112,808
Holland.....	972,394	1,094,803	1,120,225	1,506,802	1,643,390
Italy	2,058,364	2,345,028	2,137,674	2,315,624	2,407,863
Norway	242,175	290,098	333,835	378,915	429,105
Portugal	125,500	141,007	191,701	193,973	—
Roumania.....	352,829	438,158	475,686	557,181	598,116
Russia	1,044,375	1,416,351	1,589,417	2,028,949	2,399,410
Spain.....	1,006,252	901,514	793,829	784,887	1,072,451
States of the Church ...	97,792	106,901	116,317	101,520	111,185
Sweden	913,968	1,051,621	1,215,053	1,246,680	1,298,512
Switzerland	604,963	684,793	726,714	1,175,497	1,394,016
Turkey	—	—	—	—	671,320
Wurtemberg	337,779	432,249	435,149	498,513	—

Remarks.—BAVARIA.—Exclusive of service messages.

FRANCE.—In 1858, 1864, and 1865, the number of *received* international and “transit” messages is not included.

In 1863 *received* international messages are not included.
Service messages are not counted.

GERMANY.—The number of *received* international messages is unknown prior to 1859.

ITALY.—The number of messages is unknown prior to 1865.

PORTUGAL.—No data for 1869.

ROUMANIA.—No data obtainable prior to 1863.

WURTEMBERG.—No data for 1869.

As regards the tariffs, no precise information can be obtained prior to 1865; they were, however, considerably reduced by the Paris and Vienna Conventions of 1865 and 1868.

* Tariffs reduced.

Table XVI gives the traffic for all the countries which have supplied this data to the telegraph convention, and by comparing the periods subsequent to the improved and diminished rates at the dates of the telegraph conferences held at Paris in 1865, and in Vienna in 1868, with those anterior, we find that unless disturbed by war or some exceptional conditions there is a very large and continuous increase in telegraphic correspondence.

Belgium has established the benefit to be derived from the augmentation of telegraphic correspondence in decreasing the cost of working each internal telegram. In Table VII we find the cost to the State per telegram, with the tariff at 1.50 fr., was in 1860, 2.11 frs.; but in 1869, with a 50 cent. tariff, the cost was only 86 c., but this reduced tariff had produced 387,000 telegrams each year in

excess of what would have been created under the *régime* of the high tariff.

It is this commercial activity which every State should encourage, as certain to add to the general prosperity and wealth-producing power of a nation, and bearing in mind the principle established, that the increase of internal telegrams with a low tariff is *enormous*, and the increase of deficit of net product only *slight*, with a tendency to diminish, I would submit to the telegraph department of India whether it might not be worth while to try a bold effort to introduce telegraphy into the habits of the Indian community.

I am of opinion this will never be done unless the tariff is reduced to some moderate standard represented by some small *current coin*, such as half a rupee.

The lines exist; the capital is expended; the stations are opened. The work can be greatly increased without material addition to the expenditure. There is no danger of competition upon any section which may prove exceptionally productive; *such as all private companies must always apprehend.*

It is more than probable that the indirect gain to the State will far more than compensate for the direct loss. Besides, as internal telegraphy grows, international telegraphy must also increase (although not in the same proportion), and it is certain that upon every international telegram there is a large profit to the State to compensate for the loss upon the internal telegrams; and this profit is all the greater, as the cost of working each telegram is diminished by an increase in the number of internal messages.

I know that the habits of the natives of India are unlike those of any European country, and I know, by experience, the indolent tendency of the climate; but Manchester has found the way to make cheap fabrics such as the natives will buy, and the exports and imports between this country and India have increased from nothing at all to 44,394,083*l.* in 1870. The railways have no doubt found a tariff which has induced the natives to travel; is there no proportion of this amount, which will induce them to telegraph? it is saving time in both instances; without wishing to be at all dogmatic or pretending to know as much as the gentlemen at the head of the telegraphs of India already know, I submit these foregoing principles and considerations, as impressing me with the idea that a low tariff for internal correspondence in India might in a few years produce a marked change for the benefit and prosperity of the country.

The Egyptian Traffic.

The line was first opened in 1861, at a tariff of 2*l.* for twenty words; and continued at the same rate until the summer of 1868, when it was reduced to 3*os.*

Up to this date, the frequent interruptions, by the breaking of the old cable, which unfortunately was laid in shallow water, set all statistics at defiance. There are evidences of extreme fluctuations on account of the demand for cotton during the American civil war; then a reaction owing to the panic of 1866; then a change during the Abyssinian War,—in the midst of which the cable broke.

Since the new cable was laid in 1868 there has been uninterrupted communication. The opening of the Suez Canal in 1869, gave an exceptionally good year; and then the war with France and Germany produced, in 1870, an exceptionally bad year, and all the data we have will prove nothing excepting an aggregate increase; which can be represented by a progressive 12 per cent. increase per annum since the opening of the line.

There are no social messages between Europe and Egypt worth estimating. The whole are commercial, financial, and political, and are not influenced by tariff to any material extent. A reduction of tariff to 1*l.* would not produce such good results as an improvement in the speed and accuracy; and every effort is being made to make the service between this country and Egypt so rapid that a merchant can rely upon a reply to his message within the office hours of each day.

Should this increase the traffic as much as I anticipate, then I believe a reduction of tariff would soon follow.

Arguments which may be Expected to Induce Private Companies to Reduce their Tariffs.

I regret that I cannot think of any reason which should influence the directors of private companies to reduce their tariffs beyond the single one of expediency.

The foregoing pages prove conclusively, "*That every reduction of tariff leads to a diminution of the net product.*"

It may be expedient to reduce tariff with the object of staving off opposition and satisfying a popular demand, but this is sufficiently questionable, for the following reason:—

A reduction of tariff means a sacrifice of revenue for a length of time; and, after this sacrifice has been made, and is about to be rewarded by the gradual increase of revenue to the original point, there will be others ready to bring out rival cables upon the first publication of favourable receipts.

There is the danger already referred to, that after one company shall have made unproductive lines, they may be opposed upon the most productive sections by a new company with smaller capital.

I venture to say that these are points which never leave the minds of the directors of private telegraph companies.

Many Governments seem to delight in giving all sorts of concessions. We are never without a threat of opposition in one or more quarters, and there cannot be a more difficult question for the consideration of directors than that of determining *when it is expedient to make the sacrifice of lowering the tariff or extending their lines.*

There is only one way by which the full benefit of telegraphy can be obtained for the public at the expense of private enterprise. Governments could give monopolies with expressed conditions of a maximum tariff and reserve, and require that all revenue in excess of these amounts should be given to the public, either in the shape of increased facilities or reduced charges. The present insecure system is open every hour to competition, and can only result in amalgamation and higher tariffs to provide dividends for the greater amount of capital unnecessarily expended.

This amalgamation will probably only be effected after one or more companies have been almost ruined. I would, as a matter of private opinion, prefer the conditional monopoly referred to, in granting which the Government could stipulate that 2 per cent. upon the capital should be laid aside for renewals, repairs, and extensions, before any dividend was given to the shareholders; that this reserve should be continued and used for such extensions as the increase of trade demanded, and that no dividend should be divided in excess of 8 per cent., until every facility in the shape of reduced tariff and extensions had been supplied to the public that the Government might judge to be desirable. A reasonable limit in tariff would soon be established, below which no company would be expected to reduce; this point attained, and a large reserve provided, the company should then be allowed to divide the whole of their revenue.

This plan, or some modification of it, would ensure the maintenance of an efficient and reliable means of communication; it would ensure to the commercial public a supervision which would give them their reduced tariff whenever it became reasonable to do so; it would ensure to the shareholder a comparatively sound investment: in a very few years the reserve, and the duplication of the lines with the aid of this reserve, would make their dividend absolutely secure, but for this they would be required to sacrifice dividends, *if need be*, until their property had attained this sound position.

I commend a consideration of this subject to the shareholders, as the only basis upon which they could ask for, or the Government grant, a conditional monopoly.

At present we are not acting upon sound principles; most of the cable property is comparatively new, and large renewals may be required.

The property is exposed to opposition from the increasing energies of a host of concessionaires seeking concessions with the object of placing other and unnecessary schemes upon the public, or being bought off by existing companies. It is exposed to the inroads of packing companies, who boast their power of paying large dividends upon a small capital, and point with triumph to their public spirit in preventing the companies, which established the lines at a cost of millions, from earning dividends at the expense of the commercial public, forgetting, or not caring to remember, that if these companies do not pay a reasonably good dividend, and any accidents occur to the cables, capital could not be obtained to renew them; if telegraphy had to be maintained in such a case, the whole burden would fall upon the Government.

The Government is therefore interested in maintaining these lines as a dividend-paying property, or they cannot be maintained in an efficient state. They can give the companies a security, and obtain for it a material advantage to the commercial public; nor is it too much to ask that the 10,000,000*l.* of British capital invested should, by some such form, or by Act of Parliament, be defended from a competition which has not only no public good to serve, but must absolutely endanger the very existence of lines which have become a necessity to imperial and commercial interests.

If this, or some similar plan is not devised, then the alternative is, that Government should obtain the whole of the telegraphs, and, by making them only self-supporting, give the public the full advantage the system is capable of affording.

We have seen in the foregoing pages that the increase of *internal traffic* decreases the cost of working both internal and international telegrams. *Private companies obtain no benefit from this. Governments obtain all the benefit.*

It is established that lowering the tariff upon international messages diminishes the revenue directly derived from this class of correspondence, but it increases the traffic; and it is certain that the increase of international traffic largely augments the increase of internal correspondence, both by telegraph and post office, and *Governments obtain all the benefit from this cause; private companies cannot obtain any benefit whatever.*

All increase of telegraphy directly and certainly stimulates commercial activity, increases the wealth of a nation by multiplying transactions, enlarging incomes, thereby promoting a larger taxable surface for the benefit of the whole community and the amusement of the Chancellor of the Exchequer. Private companies can only obtain a minimum of advantage from the first effect, and none at all from the latter. *Government and the State are immediately benefited.*

Governments can, by *unity of management*, by *simplicity of through*

working, by uniformity of system, effect an enormous amount of saving that cannot be approached under the system of private management.

Governments can, by absence of competition, extend the system to such points as the Mauritius, Cape of Good Hope, New Zealand, the Andamans, Burmah, &c., &c., which, although comparatively unproductive, would yet, to a Government with a monopoly, become feeders to an extent which, in the aggregate, would be at least self-supporting. *No private company can afford this luxury.*

It follows, then, that Government have every advantage in their favour, every possible reason in the interest of good government and substantial benefit to the State to reduce all telegraphy to the point of being *simply a self-supporting system, not a dividend-paying system*, which it is the duty of private companies to maintain as long as possible.

There is one question in the minds of those who are not familiar with the subject which can easily be answered. *What would become of all this property in time of war?* My answer to that is, there is sufficient enlightenment amongst all nations to arrange conditions to control or suspend one or more cables or land telegraphs during the operations of war without resorting to the barbarism of destroying them; this was done during the civil war in America, and the telegraph remained intact to become the messenger of peace.

There is another important consideration in relation to this part of the subject. How will Government obtain possession of all these cables? but as that is not the subject of this paper, and not becoming in me to suggest or advocate, I shall leave it to others who may think it worthy of their attention.

I had no desire or intention of advocating the purchase of the lines by Government, nor yet did I intend to find reasons for the maintenance of a higher tariff upon international than upon internal telegrams, when I fixed my attention upon the effect of tariffs. The subject has been considered only with the view of arriving at as many fixed points as possible, and in the course of my investigations I found that Belgium had already mastered this subject; the greater part of my labour, since obtaining the Belgian report, has therefore been to examine and compare the statistics of all other countries, as well as those of private companies, with the principles advanced by Belgium; and, so far as my powers go, I cannot find any data to refute any of the deductions or principles given in the report.

APPENDIX.

I.—*An Account of Marine Cables Laid.*

The accompanying table contains as accurate a statement as I can obtain of all the submarine cables laid up to this date, and in the following remarks I state, what, in my opinion, this experience of twenty years has established.

This is by no means a new subject of investigation, but in the present day I am certain it will be instructive to many amongst the thousands who are now interested in this class of property, to have their attention briefly called to all that has been done to make submarine cables a sound property.

Eleven years ago there was a joint committee appointed by the “Lords of the Committee of Privy Council for Trade and Atlantic Telegraphy, to inquire into the construction of submarine cables, together with other evidence.”

The report is dated April, 1861, and is signed by Douglas Galton, C. Wheatstone, W. Fairbairn, Edwin Clark, Cromwell F. Varley, Latimer Clark, and George Seward, and they state that they had the benefit of the advice of the late Mr. Robert Stephenson.

They examined forty witnesses, all eminent in their day, and numbering amongst them most of the names which are yet conspicuous in the engineering, manufacture, and submerging of this class of property.

Fifty cables had been laid at the date of this investigation, all upon the same general principle.

Eight thousand miles had been lost, all belonging to four undertakings, viz., The Atlantic, Red Sea and India, Sardinia-Malta, Corfu-Malta, and Singapore to Batavia cables.

They state that the loss of all these cables was “attributable to defined causes, which might have been guarded against,” and they “believed there were no difficulties to be encountered which skill and prudence would not overcome.”

The committee considered it unreasonable to expect more rapid progress than had then been made, the first few cables laid in shallow water across the channel were comparatively easy to recover and repair; they had been manufactured without much necessity for extreme care, and had been accepted as successful precedents; further investigation was considered unnecessary, and bold attempts were made to lay cables of a similar type under entirely different conditions, but “they considered it doubtful whether the transmission of messages for even so short a period as three weeks through a cable across the whole width of the Atlantic, was not a result worth all the expenditure which had been incurred.”

Attention is called in the report to the “*remarkable fact that in almost all cases small cables had been found liable to mishaps, while the heavier the cable had been the greater had been its durability.*”

At the date of this report, the twenty-nine types of cable illustrated on the sheet which I exhibit, had been experimented upon, upwards of 1,300 tests had been made by Messrs. Siemens, Forde,

and Gisborne, for Her Majesty's Government, with the object of discovering the best form of cable, and many hundreds of tests besides had been made by Messrs. Glass Elliot, Messrs. Newall, Messrs. Siemens, Messrs. Silver, and many others with the same object; at this date 1859 to 1861 there were ample data for investigation, and there were many eminent and practical men of experience in this class of enterprise, we are not therefore disappointed in the result of the inquiry. The report is full and complete, and *establishes principles which up to the present time have uniformly guaranteed success, while the neglect of them has as uniformly resulted in partial loss or failure.*

LOSS OF CABLES.

The loss of cables was found to be attributable to the following causes:—

A. First, and the most important of all, from *imperfect manufacture*, resulting without doubt prior to this date from inexperience of the materials for insulating the copper wire, and from ignorance of the fact discovered by Professor Thompson about 1856, viz., that some kinds of copper wire were no better than iron for the purpose of conductivity, and that it required carefully selected copper to give the desired standard, which may be represented by a copper wire one-tenth of an inch in diameter, being equal to an iron wire one-third of an inch in diameter for electrical purposes.

All cables manufactured previous to this date had no advantage from this discovery.

There appear to have been mechanical difficulties in keeping the copper conductor in the centre of the insulating medium, so that the copper was sometimes found to be almost visible under the light film of gutta percha which covered it. The electric current soon weakened this film, stronger currents were used to overcome the weakness of the signals, and the cable was soon destroyed. Experience about this time had established that

A cable from the commencement of its manufacture to the time of its being laid should be tested under water and under pressure, and kept as much as possible under all the conditions in which it was meant to continue.

Sir S. Canning taught that the "*great secret was to keep a cable quiet from the time it was made until it was laid,*" and no one disputed the fact that *every time a cable is coiled or uncoiled it sustains more or less injury.*

B. Attempts to lay cables from sailing ships towed by steamers was another source of failure. The ships had not enough steerage way when met by strong head winds, and too much slack was paid out. It was difficult under such circumstances to steer a straight course, and sailing ships possessed no power of being readily stopped when a fault or accident occurred.

C. Many accidents happened from inexperience in the method of paying out cables; at the present day the wonder is that they should have succeeded so well with the rude methods and inexperience which then existed, and not that there should have been many failures and much recrimination. Reading the history of

these first attempts to place a network of cables at the bottom of the ocean fifteen and twenty years ago, is a good deal like reading the old stories of the early voyages of discovery. There are difficulties and disasters peculiar to every attempt, and the grand result is that one way or another they were overcome, or else they suggested such modifications that their recurrence was avoided, and an accident to a well-manufactured cable no longer constitutes a loss.

We read of the vessel paying out the Toulon-Algiers cable being run into by the French ship sent to assist her, and the cable, although buoyed, was lost.

Another attempt failed "from a fracture due to the occurrence of a storm."

They were five days in laying the Corsican cable, a distance of only 70 miles. "They used to anchor at night holding on to the cable waiting for daybreak."

The first attempt to lay the Sardinia-Bona cable failed from the cable breaking while trying to recover it by "*heaving it in with the windlass.*"

In the second attempt they ran short of cable; the vessel sent to guide led them out of their course. When day broke the ship which was leading was dressed with flags ready to land the cable with startling *éclat*, but they were steaming in the wrong direction, and there was not cable enough on board to allow for the error which had been committed. "The ship held on to it for four or five days, sent another steamer to bring assistance; rough weather came on, and the cable broke in 400 fathoms."

The third attempt failed "owing to imperfect manufacture."

The first Atlantic cable failed principally on account of imperfect manufacture, in a great measure arising from undue haste and urgency, but largely owing to insufficient experience.

The cable was not tested under water for fear of rusting the small steel wires of the external covering, and small wires have never since been used; large wires, the larger the better, is now a principle.

The copper was not all good.

It had often been coiled and uncoiled, and had been exposed to the strong heat of the sun, and to many changes of temperature.

Any of these conditions would now-a-days be regarded as enough to condemn the most carefully manufactured cable.

The Red Sea and Indian cables are said to have been imperfectly manufactured and laid too taut, but *they were not tested under water from the time of manufacture until they were placed at the bottom of the sea*, and this one grand omission, largely due to inexperience, is enough without the recriminatory points to condemn to loss and failure any cable whatever.

The cables laid from Cagliari to Malta and Malta to Corfu are said to have failed from imperfect manufacture. One experienced gentleman in his evidence said these cables were "such as nobody should have laid in deep water." It is sufficient at present to know that they have failed from neglect or inexperience, and that they, amongst other failures, have established the principles which have since ensured success.

D. The want of constant supervision by engineers, exclusively in the interests of the purchasers of the cable, has been a great cause of defective cables.

There may often be minute defects in the core itself, or a slightly defective splice which may reduce the electrical condition of a comparatively short length; this may easily be raised above the average standard required by the contract, by the next length being more carefully manufactured.

These minute defects must, however, kill the cable in more or less time, and the principle is established that—

Every inch should be tested in course of manufacture, and rejected if there is any irregularity of condition to cause suspicion.

There should be constant supervision, and a record of all the tests kept for the purchasers of the cable from the commencement of the contract to its final completion, and continued ever afterwards by the purchasers.

CAUSES OF INJURY TO CABLES.

The principal sources of injury to cables are: 1st, moving water either currents or tides, chafing the cables upon rocks or shingle. Experience has given many costly lessons of the effect of moving water.

Ten years ago it was generally believed that water had very little motion below 50 fathoms, and 100 fathoms was considered a point of great safety. We now know that there are exceptional localities where there is motion in the water at a depth of 500 fathoms. The Falmouth cable was chafed and destroyed at this depth from this cause.

The Channel Islands cable was also destroyed from the same cause.

The first cable ever manufactured with due regard to the principle of careful supervision, testing under water, and being retained quietly in that condition until it was laid, was the Malta and Alexandria cable laid in 1861.

This cable was submerged in too shallow water, for many miles in less depth than 20 fathoms; the result was the frequent recurrence of fracture from being rolled about by the surf, and yet this cable was only finally abandoned last year; not because it could not be kept in repair, but because it was too expensive to keep in order.

These and many other examples have established the principle that

No cable should be laid without first obtaining an accurate survey of the approach to the coast and landing places, with accurate soundings over the intended route, and as much knowledge as possible of the nature of the bottom.

Currents and anchorage should be avoided, and where that is impossible, the heaviest cable that can be laid should be provided.

Heavy cables should be laid out to depths of 400 fathoms, where there are tide-ways.

Where a current exists, a position should be sought for as far removed from it as possible.

A great cause of injury to cables is the corrosion of the external

wires, caused by moving water or marine vegetation, &c., and this has established the general practice of covering the external wires with tarred yarn saturated with a mixture of pitch and silica. There is still great room for improvement upon the present method of protecting the external covering of cables, and I commend it to the further careful study of telegraph engineers as a subject of vital importance.

Another enemy of submarine cables is the toredo of all kinds; there is one kind which has proved destructive by boring through the core, but that has only occurred in shallow water; there is another kind which destroys the hemp in a few months, and is then satisfied to fix itself upon the gutta percha and remain there. *Cables have been recovered from depths of 1,200 fathoms with all the hemp eaten away, and the core pitted with these marine animals. The recovery is then only possible by the strength of the external wires.*

All the experience we have points to the value of protection, first, of the core, then of the external covering, and if those responsible for the safety and maintenance of submarine cables could be allowed to dictate the most desirable conditions of safety they would select, besides the strongest possible cable to be manufactured, and laid with extreme care, a depth of water of about 500 fathoms, and a bottom of sand or mud; but as this cannot always be secured, nothing should be omitted in the direction of strength and quality.

Lightning is still another source of injury to cables, this is, however, so readily guarded against that we no longer hear of injury from this cause; it is said to have destroyed three cables. Mr. Siemens produced before the committee a piece of the core of the Corfu cable injured by lightning; the land line had been struck, and from the absence of any lightning guards, the cable was damaged.

Mr. Preece described the Jersey cable to have been destroyed by lightning.

Mr. Fleeming Jenkin had seen a fault 18 inches long due to this cause, and it is asserted that the same cause destroyed the Toulon-Algiers cable, which was connected to the land lines without lightning guards.

INJURY FROM ACCIDENTS AND OTHER CAUSES DURING THE PROCESS OF SUBMERGING.

The most frequent injury arises from the wire with which the cable is covered, being too brittle or parting at the scarf joints, and at once becoming little poignards, liable to pierce the core during the process of laying. The necessity for laying the cable at a moderate speed and with great care, prolongs the voyage across a broad ocean for many days and nights, and it is not surprising that these broken wires should at times pierce the core and necessitate the instant hauling back of the cable, no matter what the depth of water, or what the condition of weather may be, and this establishes the principle:—

That all cables should be made with due regard to the depth of water in which they are to be laid, and strong enough to admit

of being recovered in case of accident, which may as probably occur during a tempest as during a calm.

But accidents from this cause seldom or never occur (I do not know of a single instance) when the external wires are covered with yarn and bituminous compound; this covering has therefore the double value of protecting the external wires, and adding greatly to the safety while laying.

There are, besides, accidents liable to occur at sea which no human foresight can guard against; over a period of ten or twelve days, more or less bad weather is almost certain to occur, and should at all events be provided for by a margin of strength.

What are called foul-flakes and kinks, and accidents to machinery and to the men have occurred, and may occur again, requiring the ship to be suddenly stopped, and great strain to be thrown upon the cable, and it is sometimes necessary to cut and buoy, and leave it for several days.

That accidents need not occur often, and might not occur at all at times, is not sufficient argument to justify a cable being made unequal to an emergency.

LIGHT CABLES.

We are every now and then startled by the announcement that light cables are to be preferred to the present iron-clad type, and the object of this investigation has been to discover what data there are to justify any preference to one form of cable over another.

I have said already that the committee called attention to the remarkable fact that, in almost all cases, small cables had been found liable to mishaps, *while the heavier the cable the greater had been its durability.*

Mr. Newall, in his evidence, said that the hemp-covered cable which he attempted to lay in 1859, between Candia and Egypt, had the hemp eaten off by the toredo in a very short time, *and it was too weak to recover for repairing.*

The same firm laid an unprotected core from Varna to the Crimea, and it lasted until the winter set in; it is frequently said that it was cut by order of the French Commander-in-Chief, but there is no proof of this, and I am not disposed to believe it. Mr. Woodehouse, the engineer who laid this core, said in his evidence "*he should not advise anybody to lay so light a cable across the Atlantic, because so small a strain would break it. If it is once safe at the bottom perhaps it may rest.*"

Mr. Newall said he thought it folly to lay anything excepting unprotected core. Consistently with this conviction, he laid in 1869 several lines of unprotected indiarubber core, connecting the Grecian Islands with the main land; they were protected only near the shore.

The sea is quiet and tideless in those parts; no better spot could be wished for the experiment, *yet they every one of them gave out within two years.*

The Red Sea cable, covered externally with light wires, and unprotected with bituminous compound, was so rusted in a short time that it could not be lifted for repairs.

Notwithstanding Mr. Newall's partiality for light cables, he suggests at the close of his evidence what I assume he would consider the most perfect form of cable. He would cover the copper with indiarubber, protect this core with steel wires vulcanised, the whole then passed through heat; thus insulating all the wires he would make the cable in one length, and have no joints.

Mr. Lionel Gisborne considered a hemp-covered cable "perfectly useless for laying in water; it has both the liability to stretch and to shrink."

Mr. Fleeming Jenkin in his report to the International Exhibition of 1862, says:—

"So long as the iron wires lasted, the cables frequently continued to work in spite of faults, but sooner or later the iron wires of all these light cables rusted away in parts; so soon as this took place they one and all broke up into short sections; this fact has been observed in depths of 100 fathoms;" the reasons were not obvious to Mr. Jenkin, but he says: "*meanwhile the use of large iron wire seems a sure guarantee against this danger, for as yet no cable covered with wire of the large gauges has ever parted in the manner described.*"

"*The difficulty is to find a permanent material which shall retain its strength and continue to afford protection after the cable is laid.*"

Every word of this can be written at the present moment, that is, ten years later, with exactly the same significance.

All cables which have been manufactured and laid upon the principles which were established in 1859, are yet in good working order, and every divergence from these principles has been at best a costly experiment or utter failure.

It is urged as a strong reason in favour of unprotected core (light cable) that there are many miles of cables now in existence from which the outer covering has fallen off by decay or otherwise; but I am not of that opinion, and it can only be an opinion. In many cases, perhaps in all, the outer covering may have lost much of its strength, but it is more likely to have the merit of keeping the core protected and undisturbed, owing to its weight and accumulation of deposit upon it than to have fallen off and left the core unprotected.

I am of opinion that whenever the outer covering falls off, the life of the cable will be very short; and I am prepared to expect that in many of the cables now laid all the shallow water parts will have to be renewed from time to time.

There is no instance yet of a well-manufactured heavy cable breaking or giving out in deep water after it has been carefully laid free from defects, but there may be much due to the external covering keeping it quiet, there has assuredly been a great deal due to the external covering in the successful submerging, *and there is no experience whatever to justify the assumption that an unprotected core would last, even if laid.*

It has been urged that an iron-covered cable suspended from one point to another gradually becomes weaker, that rust and marine growth or deposit accumulates and breaks the cable with their weight; but I do not know of any instance in support of this

assumption, nor is it at all certain that a simple unprotected core would exist for any length of time, or be in any way better adapted for the supposed conditions.

Mr. Latimer Clark in his evidence says:—"You want a certain degree of weight to enable your cable to sink steadily to the bottom, especially when it has to fall into hollows and cavities, and not lay loosely across elevations."

Again, it is urged that experiments with light cables have been tried in factories or sheds, and the result proves that there are many advantages in their favour; but I am of opinion that no experiments which can be made on shore will sufficiently resemble the exigencies which may occur over a period of several days and nights at sea in storms and darkness, and still less will they prove their fitness for the unknown conditions which may exist at great ocean depths.

I desire to write with great respect for the opinions of the talented men who urge the adoption of light cables; it is my special duty to weigh well and without prejudice all they have to advance, but I think a careful investigation into the experience and practice of the last twenty years establishes conclusively *that all light cables have been short-lived, and that all heavy cables have continued working, often under most adverse conditions.*

It is my own opinion, and I am authorised to say, that it is also the opinion of my friend Captain Halpin, who has laid all the cables from Suez to Australia, besides the French Atlantic cable (11,000 miles), and has also recovered and repaired cables from a great variety of depths—that a cable should be as heavy as it can be laid with safety and admit of being recovered in case of accident. *Multiply every precaution which shall increase the strength and keep that strength intact as long as possible.*

The best form of light cable I have seen is the copper-covered core invented by Mr. Siemens (No. 8). I should have anticipated that if any light cable could have been successful, this one would have met all the conditions, excepting that of extreme cheapness, but it has not been so uniformly successful as the heavy iron-clad cables.

The very light cable invented by Mr. Varley (No. 21) admits of being laid by having the strain taken off the core by the two hempen strands, the core itself being the third strand of the cable. As a light cable to be manufactured in a great hurry and laid to meet some emergency, it has a good deal of merit, but for a deep sea cable, I am of opinion that it would be found too incomplete and unfinished, and that difficulties would be experienced in laying, which are not at once foreseen, and that there would be no durability even if successfully laid.

Every day of my experience in watching over the permanence of the 10,000 miles of cable under my care, confirms me in the opinion that too great caution and vigilance cannot be exercised in making and laying a thread which is to be removed from all human vision for ever, and designed to earn dividends by continuing a perfect conductor of electricity.

Upwards of 30,000 miles of cable have been laid since the report

of the committee was printed eleven years ago, and much experience has been gained of the exigencies incidental to submerging, buoying, grappling, and repairing; but no fact has resulted from all that experience which has established that any one precaution recommended in the report has been superfluous, whereas much has occurred, which I will not particularise, proving that any attempt to disregard any single precaution has resulted in great pecuniary loss or utter failure.

We have many reasons to confirm the belief that a submarine cable, manufactured and laid with strict attention to all known principles, may be regarded as a substantial property, likely to last for any length of time; for there is no evidence whatever upon record which shows any decay of the insulating medium or copper conductor of a well-manufactured cable, *i.e.*, *there is no decay inherent in the nature of a cable, all deterioration is external; nor is there any experience whatever to establish that this insulated copper wire will enjoy any durability if unprotected with an external covering.*

A light cable or unprotected core must therefore be regarded at best as an experiment, with the chances against the successful laying, and still more against its existing as a permanent property.

I have written enough to illustrate that the present submarine cable (No. 9) is not a hap-hazard idea, but one which has grown out of many failures and thousands of experiments; all the principles of manufacture and laying down have been established by great anxiety and reflection on the part of the able men who gave their energies to this kind of enterprise prior to 1865. We who have come upon the stage since that date, have only discovered that we may not neglect one of all the known principles, but if possible elaborate every one of them, and even then the duty and responsibility of laying and maintaining this class of property, has enough of risks and anxieties to make one heartily dislike any experiment which can only be advocated for the sake of cheapness in the first cost. *I believe this economy would be at the expense of security, and that the cable of the future will be even heavier, more perfect, and more costly than the cable of the present day.*

II.—*List of the Cables, their Length and Weight, and Sea Depth.*

Date.	From	To	Length in Miles.	Weight per Mile in Tons.	Greatest Depth in Fathoms.
1850....	*Dover	Calais	25	0'2	30
1851....	Dover	Calais	25	6'0	30
1852 {	Keyhaven	Hurst Castle	3	—	20
	*Holyhead.....	Howth	65	1'57	83
	*Port Patrick	Donaghadee	15	—	160
	*"	"	—	—	149
	*Prince Edward Island	"	12	—	18
1853 {	Denmark, across Belt	—	18	4'0	15
	River Tay	—	2	—	—
	Dover	Ostend	76	5'75	30
	Firth of Forth	—	5	1'75	7
	Port Patrick	Donaghadee	25	6'0	160
	*England	Holland	115	1'75	23
1854 {	Port Patrick	Whitehead.....	27	6'0	150
	Sweden	Denmark	12	6'0	14
	*Corsica	Sardinia	10	8'0	20
	*England	Holland	120	1'75	30
	*Holyhead.....	Howth	65	2'0	80
	*Spezzia.....	Corsica	110	8'0	325
	Holyhead.....	Howth	65	2'0	83
1855 {	*Sardinia	Africa.....	50	8'0	800
	*Cape Ray.....	Cape North	74	2'2	360
	*Sardinia	Africa.....	160	3'7	1,500
	*Varna	Balaclava	310	2½ cwt.	300
	*Eupatoria	"	60	0'75	69
	*Varna	Kilia	179	—	30
	Egypt	—	10	5'25	—
	*Italy	Sicily	5	5'25	27
	*England	Holland	123	—	23
	*"	"	119	—	23
1856 {	*Cape Ray.....	Cape North	85	2'5	300
	Prince Edward Island	—	12	2'5	14
	Across Gulf of Canso	—	1½	2'2	—
	*Crete	Alexandria.....	350	—	1,350
	*"	Syra	170	—	1,020
	St. Petersburg.....	Cronstadt	10	—	10
	Bosphorus	—	1	—	40
1857 {	Across Amazon	—	105	—	—
	*Sardinia	Bona	150	1'85	1,500
	*"	Malta	500	0'9	1,000
	*Corfu	"	500	0'9	1,000
	*Portland	Alderney	69	2'5	60
	*Alderney	Guernsey	17	2'5	44

* Not working February, 1872.

II.—*List of the Cables, their Length and Weight, and Sea Depth—Contd.*

Date.	From	To	Length in Miles.	Weight per Mile in Tons.	Greatest Depth in Fathoms.
1857	*Guernsey	Jersey.....	15	2.5	60
	Norway Fiords	—	49	2.75	300
	Ceylon.....	Mainland	30	2.75	45
	Danube	—	3	1.75	—
	Ceylon.....	Mainland	30	2.75	40
1858	*Italy	Sicily	8	5.25	40
	England	Holland	129	9.75	27
	*Cromer	Emden	280	3.0	28
	Norway Fiords	—	16	2.75	300
	*Atlantic	—	2,036	1.0	2,400
	*Dardanelles.....	Khios	565	0.94	1,100
	*Khios	Syra			
	*Syra.....	Athens			
	*Khios	Smyrna			
1859	*Crete	Alexandria.....	150	—	1,600
	"	"	—	0.9	1,350
	*Singapore	Batavia	630	0.94	20
	Denmark.....	Heligoland	46	4.0	28
	*Cromer	"	328	4.0	30
	Isle of Man	Whitehaven	36	2.5	30
	Sweden	Gottland	64	2.5	70
	Folkestone	Boulogne	24	9.5	30
	India Rivers	—	10	4.5	—
	Malta	Sicily	60	3.25	75
	Jersey	Pirou	21	3.75	10
	*Otranto	Avlona	50	0.9	400
	*Ceuta	Algeciras	25	1.0	700
	Alexandria	—	2	—	—
	Lynas	Great Ormes Head	19	3.1	14
	Ayr	Mimbre Island ...			
	*Cape Otway	King's "	240	2.0	60
	*King's Island	Hummuck "			
	*Hummuck Island ...	Circular Head ...			
1860	Great Belt	—	14	8.0	18
	"	—	14	5.5	18
	*Dacca	Pegu	116	0.9	50
1859 and 1860	*Port Vendres	Algiers	520	1.14	1,585
	*Suez	Cassire	255	0.94	{ Shoal water
1860	*Suakin.....	Cassire	474		
	"	Aden	627		
	*Aden	Hellania	718		
	*Hellania	Muscat	486		
	*Muscat	Kurrachee	481		
	*Barcelona	Mahon	198	1.25	1,400
1860	*Minorca	Majorca	35	1.9	250

* Not working February, 1872.

II.—*List of the Cables, their Length and Weight, and Sea Depth—Contd.*

Date.	From	To	Length in Miles.	Weight per Mile in Tons.	Greatest Depth in Fathoms.
1860 {	Iviza	Majorca	74	1'9	500
	*St. Antonio	Iviza	76	1'9	450
1861 {	Corfu	Otranto	—	3'4	1,000
	*Malta	Tripoli	230	2'5	385
	*Tripoli	Bengazi	508	1'85	420
	*Bengazi	Alexandria	593	{ 4'5 6'0 }	80
	Norway Fiords	—	—	2'75	300
	Dieppe	Newhaven	80	8'0	25
	*Toulon	Corsica	195	1'14	1,550
1862 {	Wexford	Abermam	63	5'25	50
	Lowestoft	Zandvoort	125	9'0	27
	Across Cork Har- bour..... }	—	—	0'6	—
	Across Blackwater....	—	—	1'75	—
	Greencastle.....	Cape Clear.....	—	—	—
	Bristol Channel	—	—	3'5	26
1863....	*Cagliari	Sicily	211	1'8	1,025
1864 {	*Cartagena	Oran	130	—	1,420
	Gwadar	Elphinstone Inlet	357	{ 4'3 }	437
	Mussendom	Bushire	393		97
	Bushire	Fao	154		19
	Gwadar	Kurrachee	246		670
	Otranto	Avlona	50	4'0	347
1865 {	Indian Rivers	—	—	—	—
	Sylt	Tondern.....	6	—	—
	*Bona	Sicily	270	—	250
	Trelleborg	Rugen	55	8'0	80
	South Foreland	Cape Grisney.....	25	—	30
1866 {	Atlantic	—	1,896	1'75	2,424
	"	—	1,852	1'5	2,424
	Lyall's Bay.....	White's Bay	41 K	9'1	50
	Crimea	Circassia	40	—	—
	Colonia	Buenos Ayres ...	30	12'0	4
	England	Hanover.....	224	10'9	27
	Cape Ray	Aspee Bay	91	—	200
	Leghorn	Corsica	65	—	100
	Persian Gulf	{ Additional cable to connect Jask..... }	160	—	110
	*Khios	Crete	200	—	1,200
1867 {	South Foreland	La Panne	47 K	9'7	28
	Ceylon.....	—	—	—	10
	Malta	Alexandria.....	925 K	1'5	2,000
	Havana, Cuba.....	Key West	125	2'5	20

* Not working February, 1872.

II.—*List of the Cables, their Length and Weight, and Sea Depth—Contd.*

Date.	From	To	Length in Miles.	Weight per Mile in Tons.	Greatest Depth in Fathoms.
1867 {	Key, West	Punta Russa	120	2'5	20
	Placentia	St. Pierre	112	2'5	76
	St. Pierre.....	Sydney	188	2'5	250
	Arendal	Hirtshalts	66	—	110
1868 {	Messina Straits	—	5	6'0	40
	Havanna.....	Key West	125	—	—
1869 {	Peterhead	Egursand	250	3'0	70
	Grisselhamn	Nystadt	96	3'0	47
	Newbiggin	Sondervig	334	—	48
	*Black Sea	—	300	—	—
	*Scilly Isles	Land's End	27	6'0	40
	Malta	Sicily	54	1'5	75
	Tasmania	Australia	176	2'0	—
	Scilly Isles	Land's End	27	3'0	42
	*Corfu	Sta. Maura.....	50	—	160
	*Sta. Maura.....	Ithaca	7	—	180
	Ithaca	Cephalonia	7	—	—
	*Cephalonia	Zante	10	—	60
	Bushire	Jask	505	4'3	97
	Brest	St. Pierre	2,584	1'6	2,760
	St. Pierre.....	Duxbury	749	2'8	259
	Moen	Bornholm	80	4'0	28
	Bornholm	Libau	230	3'5	62
1870 {	Scotland	Orkney Isles	—	—	37
	Salcombe	Brignogan	101	2'78	59
	Beachy Head	Cape Antifer.....	70	11'75	34
	Suez.....	Aden	1,460	2'75	968
	Aden	Bombay	1,818	1'75	2,060
	Porthcurno.....	Lisbon	823	1'6	2,625
	Lisbon	Gibraltar	331	1'5	535
	Gibraltar.....	Malta	1,120	1'5	1,450
	*Porthcurno.....	Mid Channel.....	65	—	62
	Marseilles	Bona	447	1'75	1,600
	Bona	Malta	386	1'75	650
	Madras	Penang	1,408	1'4	1,284
	Penang	Singapore	400	3'4	36
	Singapore	Batavia	557	3'5	22
	Malta	Alexandria.....	904	1'5	1,440
	Batabano	Santiago.....	—	—	—
	Jersey	Guernsey	16	7'0	32
	Guernsey	Alderney	18	7'0	30
	Sta. Maura.....	Ithaca	7	3'5	180
	Zante	Trepito	11	3'5	235
	Sunium	Thermia.....	25	3'5	160
	Patras	Lepanto.....	2	3'5	20
	Dartmouth	Guernsey	—	—	58
	Guernsey	Jersey	—	—	32
	Porto Rico	St. Thomas	110	—	22
	Santiago	Jamaica	140	—	—
	Portpatrick.....	Donaghadee	25	—	160

* Not working February, 1872.

II.—*List of the Cables, their Length and Weight, and Sea Depth—Contd.*

Date.	From	To	Length in Miles.	Weight per Mile in Tons.	Greatest Depth in Fathoms.
1871	Javea	Iviza	—	} 2.75 {	430
	Majorca	Minorca	—		93
	Villa Real	Gibraltar	155	3.5	84
	Marseilles	Algiers	—	—	1,625
	Singapore	Saigon	620	2.5	60
	Saigon	Hong Kong	975	3.5	630
	Hong Kong	Shanghai	1,100	—	42
	Shanghai	Nagasaki	1,200	— {	135
	Nagasaki	Vladivostock....			80
	Rhodes	Marmarice	22	—	—
	Latakiah	Cyprus	86	—	—
	Samos	Scala Nuova	11	1.5 main	82
	Mytelini	Aivali	13	2.5 inter	33
	Khania	Retimo	32	6.0 S.E.	about 200
	Retimo	Khandia	41	—	152
	Khandia	Rhodes	201	—	600
	Khios	Chesmeh	6	—	33
	Zante	Corfu	150	—	—
	"	Cephalonia	18	—	203
	Lowestoft	Greitseil	223	7.5	23
	Anjer	Telok Betong	55	3.5	50
	Banjoewangie	Port Darwin	1,082	3.5	1,580
	St. Thomas	St. Kitts	133	—	1,170
	St. Kitts	Antigua	90	—	130
	Antigua	Guadaloupe	84	—	—
	Guadaloupe	Dominica	55	—	—
	Dominica	Martinique	60	—	—
	Martinique	St. Lucia	65	—	—
	St. Lucia	St. Vincent	64	—	—
	St. Vincent	Barbadoes	150	—	—
	"	Grenada	80	—	156
	Grenada	Trinidad	120	—	—
	Trinidad	Demerara	350	—	—
	Porto Rico	Jamaica	—	—	—

Total number of cables 213

Total length in miles 45,783½

Some STATISTICS relating to the TRAFFIC through the SUEZ CANAL ;
to MERCHANT VESSELS touching at ST. HELENA ; and to LOSSES
POSTED on “ LLOYD’S LOSS BOOK.” By HENRY JEULA, Member
of Lloyd’s, F.R.G.S., F.S.S.

[Read before the Statistical Society, 18th June, 1872.]

CONTENTS :

	PAGE		PAGE
I.—Traffic through the Suez Canal	327	III.—Losses Posted on “Lloyd’s	
II.—Merchant Vessels touching at		Loss Book ”	330
St. Helena	329		

I.—Traffic through the Suez Canal.

IN 1871 the number of vessels which passed through the Canal, as given in the tables published by Messrs. Cory Brothers and Co.,* had increased from 491 in 1870 to 761, a difference of 270, or 54·99 per cent., while the tonnage had increased from 436,618 tons in 1870, to 771,409 tons in 1871, a difference of 334,791 tons, equal to an increase of 76·68 per cent.

The following table gives the proportion of the tonnage of various countries to each other and to the whole trade of the canal, as well as the proportionate increase or decrease relating to the different nationalities :—

Country.	Number of Vessels.		Percentage of		Percentage of Tonnage on Annual Total, 1871.
	1870.	1871.	Increase.	Decrease.	
Austrian	26	67	157·69	—	5·59
British.....	319	496	55·49	—	70·86
Egyptian.....	32	20	—	37·50	1·74
French	75	67	—	10·67	11·91
Italian	9	46	411·11	—	3·81
Spanish	3	5	66·67	—	0·41
Turkish	18	30	66·67	—	2·20
American	1	3	233·33	—	0·54
Belgian	—	4			0·57
Burmanian	—	1			0·05
Danish.....	1	1			0·08
Dutch	2	5			0·87
German	—	8			0·46
Norwegian	—	1			0·17
Portuguese	2	2			0·12
Russian, Greek, &c.	3	5			0·62
	491	761	54·99	—	100·00

* “Suez Canal Traffic, 1871.” London: Cory Brothers and Co., 150, Leadenhall Street, E.C.

It appears that while of British tonnage using the Canal in 1871, amounting in all to 504,797 tons, only 41,824 tons, or 8·29 per cent., were Government vessels and yachts; of the French tonnage, 65,959 tons in all, the very large proportion of 25,882 tons, or 39·24 per cent. consisted of Government vessels and yachts, showing that only about 40,000 French mercantile tonnage used it in the year.

The proportions of mercantile and Government and yacht tonnage of all countries were as under:—

	Percentage.
Mercantile tonnage	90·38
Government and yacht tonnage	9·62
	<hr/>
	100·00
	<hr/>

The different months of the year give the following proportions of the annual total:—

	Percentage of Annual Total.	
	Vessels.	Tonnage.
January	9·72	8·45
February	9·07	8·28
March	9·07	9·67
April	7·23	7·24
May	6·44	6·49
June	5·78	5·43
July	8·15	7·66
August	7·88	8·47
September	7·23	6·92
October	10·51	11·22
November	8·41	9·32
December	10·51	10·85
	<hr/>	<hr/>
	100·00	100·00

It thus appears that the largest number of vessels passed through the Canal in October, December, and January, and the smallest number in May and June; the largest amount of tonnage in October, December, March, and November, and the smallest amount of tonnage in June, May, and September.

The average tonnage per vessel was nearly 1,014 tons, the largest vessels (on the average) passing in March, August, October, November, and December, and the smallest in January, February, June, July, and September.

II.—*Merchant Vessels touching at St. Helena.*

In contrast with the very large increase in the traffic *viâ* the Suez Canal, it is of interest to notice the decrease in the number of vessels sailing *viâ* the Cape of Good Hope and touching at the island of St. Helena. The figures I have obtained from lists published by Messrs. Solomon, Moss, Gideon, and Co., of St. Helena.

In 1871, *forty-nine* British *merchant steamers*, with a tonnage of 55,631 tons, are reported against *forty-one* British and *one* Dutch *merchant steamers*, with a tonnage of 47,054 tons in 1870; an increase of *seven* steamers and 8,577 tons.

The following table shows the variations in the number and proportion of the various *merchant sailing vessels* for 1871, as compared with the average of the two previous years :—

Number of Sailing Vessels.

Nationality.	Two Years' Average, 1869-70.		1871.		Percentage of	
	Number.	Percentage on Annual Total.	Number.	Percentage on Annual Total.	Increase.	Decrease.
British.....	439	57·84	379	55·09	—	13·67
French.....	52	6·85	77	11·19	48·08	—
Dutch	94	12·39	86	12·50	—	8·51
American—						
Merchant vessels....	23		23			
Whalers	59		52			
	82	10·80	75	10·90	—	8·54
Spanish	16	2·11	15	2·18	—	6·25
German	33	4·35	21	3·05	—	36·36
Russian	8	1·05	5	0·73	—	37·50
Swedish	12	1·58	9	1·31	—	25·00
Norwegian	13	1·71	12	1·74	—	7·69
Various countries ..	10	1·32	9	1·31	—	10·00
	759	100·00	688	100·00	—	9·35

I am unable to give the particulars of tonnage for the year 1869, and consequently cannot furnish the average for the two years

1869-70, but the following table shows the relation of 1870 to 1871; had the two years' average been available, doubtless the decrease would have been more marked:—

The Years 1870 and 1871 Compared as to Tonnage.

Nationality.	1870.			1871.				
	Tonnage.		Per-centage on Annual Total.	Tonnage.		Per-centage on Annual Total.	Percentage of	
							In-crease.	De-crease.
British		319,838	65·86		280,981	63·26	—	12·15
French		19,947	4·11		34,081	7·67	70·86	—
Dutch		76,534	15·76		66,793	15·04	—	12·73
American—								
Merchant } vessels }	12,713			17,706				
Whalers ...	12,654			10,734				
		25,367	5·22		28,440	6·40	12·11	—
Spanish		8,990	1·85		7,973	1·80	—	11·31
German		16,309	3·36		7,860	1·77	—	51·81
Russian		4,767	0·98		3,782	0·85	—	20·66
Swedish		4,493	0·93		4,363	0·98	—	2·89
Norwegian		5,636	1·16		5,110	1·15	—	9·33
Various } countries }		3,738	0·77		4,798	1·08	28·36	—
		485,619	100·00		444,181	100·00	—	8·53

III.—*Losses Posted on “Lloyd’s Loss Book.”*

From a table for 1871 given in “Lloyd’s List,” coupled with the return for 1870 (in which year the distinction between sailing vessels and steamers was for the first time made), I am enabled to compare the number posted upon the “Loss Book” in the two years, with the following results:—

(a.) *The Number of Vessels Posted on "Lloyd's Loss Book," in 1870 and 1871.*

Month.	Sailing Vessels.				Steamers.			
	1870.	1871.			1870.	1871.		
	Number.	Number.	Increase.	De-crease.	Number.	Number.	Increase.	De-crease.
January	253	338	85	—	18	33	15	—
February	252	285	33	—	15	24	9	—
March	203	241	38	—	17	14	—	3
April	165	151	—	14	10	11	1	—
May	158	125	—	33	10	22	12	—
June	123	126	3	—	11	17	6	—
July	128	146	18	—	13	17	4	—
August	158	188	30	—	12	21	9	—
September	226	270	44	—	12	17	5	—
October	396	282	—	114	36	18	—	18
November	260	284	24	—	24	17	—	7
December	322	332	10	—	29	42	13	—
Annual total	2,644	2,768	124	—	207	253	46	—
First quarter	708	864	156	—	50	71	21	—
Second „	446	402	—	44	31	50	19	—
First half- year	1,154	1,266	112	—	81	121	40	—
Third quarter	512	604	92	—	37	55	18	—
Fourth „	978	898	—	80	89	77	—	12
Second half- year	1,490	1,502	12	—	126	132	6	—

The percentages of increase or decrease in 1871, with the monthly percentage upon the annual total for the two years' average, are given in the following table:—

(b.) *The Percentage of Increase or Decrease in 1871, with the Monthly Percentage on Annual Total for the Two Years' Average, 1870-71.*

	Sailing Vessels.			Steamers.		
	Percentage of		Average Monthly Percentage on Annual Total, 1870-71.	Percentage of		Average Monthly Percentage on Annual Total, 1870-71.
	Increase.	Decrease.		Increase.	Decrease.	
January	33·60	—	10·92	83·33	—	11·09
February.....	13·10	—	9·92	60·00	—	8·48
March	18·72	—	8·20	—	17·65	6·74
April	—	8·48	5·84	10·00	—	4·57
May	—	20·89	5·23	120·00	—	6·96
June	2·44	—	4·60	54·55	—	6·09
July.....	14·06	—	5·06	30·77	—	6·52
August	18·99	—	6·39	75·00	—	7·17
September	19·47	—	9·17	41·67	—	6·30
October	—	28·79	12·53	—	50·00	11·74
November	9·23	—	10·05	—	29·17	8·91
December	3·11	—	12·09	44·83	—	15·43
Annual total....	4·69	—	100·00	22·22	—	100·00
First quarter	22·03	—	29·05	42·00	—	26·30
Second „	—	9·87	15·65	61·29	—	17·61
First half-year	9·71	—	44·72	49·38	—	43·91
Third quarter....	17·97	—	20·62	—	48·65	20·00
Fourth „	—	8·18	34·66	13·48	—	36·09
Second half-year	0·81	—	55·28	4·76	—	56·09

From a Parliamentary paper recently issued,* I find that during the year 1871 there were vessels “*completed*” as under in the United Kingdom:—

Sailing Vessels—

Iron	39
Wood	439
Composite	7
Total	<u>485</u>

Steamers—

Iron	471
Wood	63
Composite	3
Total	<u>537</u>

It may therefore, I believe, be fairly presumed that the number of *sailing vessels* would be *less in 1871 than in 1870*, but *sailing vessels posted on “Lloyd’s Loss Book”* increased by 4·69 per cent., while as to *steamers*, it will most probably result that the entire increase in number was less than 200, or not 6·22 per cent., while *steamers posted on “Lloyd’s Loss Book”* had increased in the ratio of 22·22 per cent.

* Return to the House of Commons “of the Number and Tonnage of Vessels, “the Building of which was completed in the Year 1871, at each Port in the “United Kingdom.”—Board of Trade, 19th February, 1872.

On the CONSUMPTION of TOBACCO in the UNITED KINGDOM, 1801-70.

By WILLIAM E. A. AXON, M.R.S.L., F.S.S.

[Read before the Statistical Society, 18th June, 1872.]

FROM time to time the attention of the public has been directed to the subject of self-imposed taxation. The late Mr. G. R. Porter, who was the first to use that term, applied it to the national expenditure on "articles from which we could very well abstain, which "are of little or no use to us, either bodily or intellectually." In the present paper it is proposed to give some details as to the national cost of tobacco, a luxury which may be taken as an extreme type of the class. Let us, then, see what this single narcotic has cost the nation during the present century.

First as to revenue. To ascertain this we must learn what has been received in customs duties and for excise licences. The data are defective in several points. Before 1815 we have no complete information as to the number and value of excise licences in Ireland. For 1804 the Scotch return is missing. For 1813 the customs records of Great Britain are destroyed.

TABLE I.—*Total Revenue from the Excise and Customs upon the Consumption of Tobacco in the United Kingdom, where not otherwise stated, during Seventy Years, 1801-70.*

Years.	Excise—Revenue.			Customs Duty.
	Number of Licences Issued.		Amount of Duty. [000's omitted.]	Net Amount. [000's omitted.]
	Dealers. [000's omitted.]	Manufacturers.		
			£	£
1801	83,	418	16,	1,209,
'02	86,	486	17,	1,239,
'03	88,	437	17,	1,295,
'04	85,	297	16,	1,375,
'05	94,	405	15,	1,391,
1806	95,	398	15,	1,546,
'07	97,	412	15,	1,652,
'08	99,	415	15,	1,852,
'09	99,	427	15,	1,776,
'10	102,	449	16,	2,044,
1811	106,	479	16,	2,254,
'12	107,	493	16,	2,378,
'13	108,	504	17,	—
'14	107,	477	16,	2,235,
'15	104,	812	22,	2,505,

TABLE I.—*Revenue from the Excise and Customs from Tobacco—Contd.*

Years.	Excise—Revenue.		Customs Duty.	
	Number of Licences Issued.		Amount of Duty. [000's omitted.]	Net Amount. [000's omitted.]
	Dealers. [000's omitted.]	Manufacturers.		
			£	£
1816	100,	927	33,	2,806,
'17	102,	891	34,	2,916,
'18	106,	874	35,	2,838,
'19	108,	878	35,	2,900,
'20	111,	874	36,	3,127,
1821	111,	826	36,	3,123,
'22	111,	771	35,	3,263,
'23	115,	776	36,	3,426,
'24	118,	757	37,	3,379,
'25	122,	734	39,	3,259,
1826	127,	766	44,	2,659,
'27	131,	774	41,	2,827,
'28	135,	758	42,	2,794,
'29	137,	731	42,	2,850,
'30	139,	717	46,	2,924,
1831	161,	733	49,	2,965,
'32	164,	739	50,	3,086,
'33	168,	743	51,	3,140,
'34	172,	720	52,	3,224,
'35	176,	675	53,	3,335,
1836	181,	658	54,	3,397,
'37	182,	646	54,	3,418,
'38	186,	654	56,	3,562,
'39	186,	666	55,	3,496,
'40	186,	686	58,	2,586,
1841	185,	696	58,	3,551,
'42	185,	690	58,	3,557,
'43	188,	732	59,	3,711,
'44	193,	704	60,	3,952,
'45	199,	710	62,	4,202,
1846	205,	683	63,	4,309,
'47	206,	669	64,	4,264,
'48	208,	642	64,	4,351,
'49	211,	651	65,	4,408,
'50	215,	645	66,	4,318,
1851	218,	641	66,	4,838,
'52	224,	612	68,	4,448,
'53 year end } 31st March }	229,	598	69,	4,627,
'55	227,	588	69,	4,759,

TABLE I.—*Revenue from the Excise and Customs from Tobacco—Contd.*

Years.	Excise—Revenue.			Customs Duty.
	Number of Licences Issued.		Amount of Duty. [000's omitted.]	Net Amount. [000's omitted.]
	Dealers. [000's omitted.]	Manufacturers.		
			£	£
1856	230,	574	69,	4,748,
'57	234,	564	70,	5,072,
'58	236,	565	71,	5,111,
'59	239,	570	72,	5,010,
'60	245,	570	73,	5,552,
1861	250,	573	75,	5,650,
'62	253,	563	76,	5,586,
'63	255,	546	76,	5,690,
'64	259,	553	84,	5,950,
'65	266,	555	79,	6,055,
1866	270,	563	80,	6,201,
'67	275,	575	82,	6,458,
'68	280,	581	84,	6,497,
'69	284,	597	85,	6,530,
'70	283,	586	82,	6,614,
Total	—	—	3,393,	248,058,

The gross results, bearing in mind the defective returns of the earlier years, may be thus stated:—

	£
Total Customs duties	248,058,198
„ Excise licences	3,392,564
	<u>251,450,762</u>
Estimate for the various gaps in the official records*	2,413,394
	<u>253,864,156</u>
Total revenue (<i>inclusive</i> of estimate) from tobacco } in the seventy years 1801-70	
Annual average revenue	<u>3,626,630</u>

In order to estimate with absolute accuracy the extent of the national consumption of tobacco, it would be necessary to know the amount of manufactured tobacco entered for home consumption, the amount of unmanufactured tobacco entered for home consump-

* The Irish excise licences brought, in 1801, 3,159*l.*; in 1802, 3,072*l.*; in 1803, 3,115*l.*; in 1804, 2,916*l.*; in 1805, 138*l.*;* an average on the five years of 2,480*l.*, which in fourteen years (1801-14) would amount to 34,720*l.*, and if the Scotch excise for 1804 be reckoned at the same figure as the year preceding (865*l.*), we shall then have to add 35,585*l.* to the total of the inland revenue derived from this source. We may reckon the amount of customs duty for 1813 at the same figure as the year preceding, 2,377,809*l.*

* The figures for this year seem incredible.

tion, the additional weight created in the process of manufacture, the extent of adulteration, the extent of smuggling, and the average price of tobacco.

There does not appear to be any separate return of the manufactured tobacco imported previous to 1820. MacCulloch's figures, although headed "unmanufactured" tobacco, really indicate the total importation into the kingdom.

The additional weight imparted to the raw material by the moisture added in the processes of manufacture is estimated by Dr. Smiles at 33 per cent. The extent of adulteration is much more difficult to estimate. 74·5 per cent. of the samples sent from the Excise to the Government Laboratory in 1867 were adulterated. 47·0 per cent. of samples sent from the Customs were adulterated. "Out of 432 samples of tobacco examined in 1870 for the Excise Department, 312 were found to be adulterated; the adulterant; "being wheat and rice starches, sugar, liquorice, lampblack, "catechu, and colouring matter. The amount of adulteration "ranged up to 4 per cent. starch, 46 per cent. sugar, and 55 per "cent. of liquorice. Almost all the samples found adulterated "with sugar and liquorice were 'Cavendish;' it is believed that "it is smuggled into this country in small quantities by sailors. "Two important seizures of tobacco, together exceeding 7,000 lbs., "were made in the south of Ireland, the adulterants being in the "one case wheat starch and in the other rice starch; these are the "only instances in which starch has been found to be used as an "adulterant since the spring of 1868." When it is recollected through how many hands tobacco usually passes before it reaches the consumer, and that adulteration is the great vice of our commercial system, I do not think we shall be at all extravagant in estimating that 25 per cent. of foreign matter, innocuous or injurious as the case may be, is added to the raw material by the combined attentions of manufacturers and traders, wholesale and retail. The amount of smuggling is certainly very great. This must always be the case with any heavily taxed article. Some curious evidence was given on this subject before the Committee of the House of Commons on the Tobacco Trade in 1844. Witnesses, then examined, variously reckoned the proportion of smuggled tobacco at from 8 to 100 per cent. of the duty-paid article. I have estimated the amount of smuggled tobacco as 10 per cent. upon both manufactured and unmanufactured varieties. In estimating the average price of British-made tobacco, Dr. Smiles has reckoned the cost of the tobacco at 10*d.* per lb. (a low figure) and added to it the amount of duty—3*s.* 2*d.* per lb. The duty has varied in the course of the century, but there is little danger of being extravagant in taking 4*s.* as the uniform value per lb. Cigars

he reckons at 15s. per lb., and the other varieties of manufactured tobacco at 7s. These varieties are not discriminated in the following tables, and I have taken under the middle figure and reckoned them at 10s. per lb.

TABLE II.—*Amount of Tobacco Entered for Home Consumption, in United Kingdom, during Seventy Years, 1801-70.*

[000's omitted.]

Year.	Unmanufactured.	Manufactured.	Total.
	lbs.	lbs.	lbs.
1801	16,905,	—	16,905,
'02	18,449,	—	18,449,
'03	17,868,	—	17,868,
'04	18,038,	—	18,038,
'05	16,814,	—	16,814,
1806	17,517,	—	17,517,
'07	16,964,	—	16,964,
'08	18,724,	—	18,724,
'09	19,253,	—	19,253,
'10	16,330,	—	16,330,
1811	21,376,	—	21,376,
'12	20,940,	—	20,940,
'13	19,593,	—	19,593,
'14	15,373,	—	15,373,
'15	17,955,	—	17,955,
1816	17,548,	—	17,548,
'17	18,376,	—	18,376,
'18	17,882,	—	17,882,
'19	16,378,	—	16,378,
'20	16,058,	—	16,058,
1821	15,828,	1,	15,829,
'22	16,290,	3,	16,292,
'23	17,186,	1,	17,187,
'24	16,915,	2,	16,917,
'25	18,796,	9,	18,805,
1826	17,706,	30,	17,736,
'27	18,696,	50,	18,746,
'28	18,505,	50,	18,554,
'29	18,819,	67,	18,886,
'30	19,188,	105,	19,294,
1831	19,419,	115,	19,534,
'32	20,087,	149,	20,235,
'33	20,503,	144,	20,647,
'34	21,048,	146,	21,194,
'35	21,804,	142,	21,946,

TABLE II.—*Amount of Tobacco Entered for Home Consumption—Contd.*

[000's omitted.]

Year.	Unmanufactured.	Manufactured.	Total.
	lbs.	lbs.	lbs.
1836	22,151,	159,	22,309,
'37	22,321,	145,	22,466,
'38	23,150,	190,	23,340,
'39	22,774,	196,	22,970,
'40	22,683,	194,	22,877,
1841	21,871,	214,	22,085,
'42	22,013,	225,	22,238,
'43	22,749,	264,	23,013,
'44	24,357,	239,	24,596,
'45	25,917,	245,	26,162,
1846	26,596,	264,	26,860,
'47	26,430,	209,	26,638,
'48	26,988,	207,	27,194,
'49	27,348,	205,	27,553,
'50	27,388,	196,	27,584,
1851	27,706,	209,	27,915,
'52	25,896,	187,	26,083,
'53	29,349,	217,	29,565,
'54	30,186,	206,	30,392,
'55	30,115,	219,	30,333,
1856	32,164,	249,	32,413,
'57	32,424,	253,	32,677,
'58	33,669,	260,	33,929,
'59	34,493,	298,	34,791,
'60	35,107,	283,	35,390,
1861	34,527,	303,	34,830,
'62	35,093,	334,	35,428,
'63	36,751,	582,	37,333,
'64	37,190,	764,	37,954,
'65	38,077,	828,	38,905,
1866	39,622,	881,	40,503,
'67	39,788,	933,	40,721,
'68	40,363,	917,	41,280,
'69	40,834,	886,	41,719,
'70	40,531,	840,	41,372,
Total of 70 years	1,697,748,	13,811,	1,711,560,

The gross results may be thus stated:—

	lbs.	£
Unmanufactured tobacco entered for } home consumption	1,697,748,608	
Additional weight acquired in manu- } facture, 33 per cent.....	560,257,040	
Add 25 per cent. for adulteration	424,437,152	
„ 10 „ „ smuggling	169,774,860	
	<u>2,852,217,660</u>	at 4s. per lb. = <u>570,443,532</u>
Manufactured tobacco entered for } home consumption	13,811,471	
Add 10 per cent. for smuggling	1,381,147	
	<u>15,192,618</u>	at 10s. per lb. = <u>7,596,309</u>
Total	<u>2,867,410,278</u>	<u>£578,039,841</u>

Thus, without reckoning the cost of pipes and all the rest of the appliances necessary for the convenience of the lovers of the weed, we have the enormous amount of five hundred and seventy-eight million pounds expended, on a single form of sensual gratification, by two generations. Supposing one of these smokers had commenced on the morning when the century was born, and had, without intermission for Sunday rest or holiday, worked his ten hours daily, telling out 2,220 sovereigns every hour, he would at the end of the seventy years* have still had before him a pile of 10,401,500*l.* remaining of the national tobacco bill.

* Solar years.

SUMMARY of STATISTICS of the RUSSIAN EMPIRE. By ROBERT MICHELL, ESQ., Of the Foreign Department, India Office, Fellow of the Royal Geographical Society, Fellow of the Imperial Russian Geographical Society.

CONTENTS :

	PAGE		PAGE
I.—Superficial Extent.....	341	VII.—Army and Navy	351
II.—Form of Government	342	VIII.—Land Tenure ; Serfs, 1861 ; Modes of Cultivation ; in Provinces.....	352
Finland	343	IX.—Education	355
Poland	343	X.—Publications	358
III.—Weights, Measures, and Money	344	XI.—Products ; Natural or Agri- cultural	360
IV.—Population in 1867 ; Pro- vinces ; Square Miles ; Population per Square Mile ; Proportion to Land ; Sexes.....	344	XII.—Industries ; Classes ; Value of Manufactures ..	362
V.—Increase and Movements of the Population	349	XIII.—Foreign Trade	363
VI.—Fecundity of the Popula- tion and Distribution	350	XIV.—Railways.....	365
		XV.—Finance	366
		APPENDIX.	
		Tables I to V	367

I.—*Superficial Extent.*

THE Russian Empire occupies one-ninth part of the dry surface of the globe, covering an area of 389,311'44 geographical square miles, thus :—

	Geographical Square Miles.
European Russia, including the Trans-Ural portions of the } provinces of Perm, and Orenburg and Nova-Zemlia	89,920'79
Kingdom of Poland.....	2,216
Principality of Finland	6,835'20
Lieutenancy of the Caucasus	7,979'08
Siberia, with islands ; the country of the Amùr ; Sahalien } and the Turkestan region.....	272,679'74
Caspian and Aral seas	9,680'63
Total	<u>389,311'44</u>

On the accession of Peter the Great to the Russian throne, the Russian territory embraced—

In Europe	79,345 geographical square miles.
„ Asia.....	185,781 „
Total.....	<u>265,126 „</u>

So that from the commencement of the reign of Peter to the present

day, the empire has acquired an additional extent of 124,185 geographical square miles.

The Russian empire is divided into 76 governorships, 15 regions, 1 territory (Cossack), 2 circuits, 1 department, and 3 townships, which may be thus tabulated:—

	Governor-ships.	Regions.	Territory.	Circuits.	Townships.	Department.
In European Russia	48	2	1	—	3	—
„ Siberia	4	10	—	—	—	—
„ Caucasus	6	3	—	2	—	1
„ kingdom of Poland	10	„	—	—	—	—
„ principality of Finland	8	„	—	—	—	—
	76	15	1	2	3	1

II.—*Form of Government.*

The Emperor is styled Autocrat of all the Russias, and is absolute. All the Departments of State work in his name, and dispense the laws as enacted by the Emperor alone. In his capacity of Guardian of the True Faith, the Emperor wields the spiritual as well as the temporal power, directing the government of the church through the *Holy Synod*. At the same time all denominations of Christians, as well as Jews, Mahomedans, and Pagans, are equally tolerated in Russia, and the dissenters from the Greco-Russian Church—numbering perhaps more than 20,000,000—are no longer the objects of persecution which they were until the beginning of the present reign.

The Government of the empire is conducted by means of—

1. The Council of the Empire (presided over by the Grand Duke Constantine), which deliberates upon all matters in connection with legislation.

2. The Ruling Senate.

3. The Holy Synod.

4. Committee of Ministers.

5. Ministerial Departments.

6. His Imperial Majesty's Chancery; this is composed of four sections—

Sec. 1. For the reception of communications to His Majesty from high dignitaries, and of periodical reports of ministers and governors of provinces.

Sec. 2. For the collection and codification of laws.

Sec. 3. This section has the charge of the affairs of the secret or high police, and deals with the regulations affecting foreign residents in Russia.

Sec. 4. For the direction of the management of educational and charitable institutions.

7. Secretaryship of State for the reception of petitions.

8. Committee of Petitions.

9. His Imperial Majesty's Chancery on the affairs of the kingdom of Poland, and

10. Secretaryship of State for the principality of Finland.

In countries and groups of provinces requiring more direct supervision, the Government is entrusted to lieutenants, as in the *Caucasus* and in the kingdom of Poland, and to governors-general, as in Finland, the *Baltic provinces*, the *North-west provinces*, *South-west provinces*, *New Russia provinces*, *Orenburg region*, *Western and Eastern Siberia*, and in *Turkestan*.

The grand duchy or principality of Finland, which was conquered by Russia in 1809, retains its ancient Swedish constitution, left to it by the Emperor Alexander I, with its own civil and criminal laws, its army and financial system, and is represented by its own consuls in Russian ports.

The Diet of Finland is composed of representatives of four classes — the gentry (or nobility), clergy, town residents, and peasantry. The annual budget of the principality is confirmed by the Emperor, who, on a representation of the senate, also elucidates and amplifies the laws of Finland; and the decisions of the Diet, confirmed by his Imperial Majesty, receive the force of laws.

The kingdom of Poland by an Act of Alexander I, dated the ^{27th November,}_{9th December,} 1815, was granted, in conformity with the Treaty of Vienna, a liberal constitution, which she lost through the revolution of 1830, and which gave place to the organic statute of 26th February (o.s.), 1832. Under this statute Poland was deprived of her army, and Poles were rendered liable to serve in the Russian ranks; the properties of political offenders became liable to sequestration; judges could be removed from their seats, and the Polish Senate and Chamber of Representatives were totally abolished. A lieutenant with a senate composed of members nominated by the Emperor, were placed at the head of the administration.

By ukases of the ^{14th}_{26th} March and ^{24th May,}_{5th June,} 1861, the Emperor Alexander II restored to Poland her former State Council: in the sense, however, of the statute of 1832. This became a council of ministers, with the addition of the higher clerical element and of the presidents of provincial councils.

Secondary councils, or committees, on the principle of selection, were at the same time established in the various provinces of the kingdom. Their functions chiefly related to the development of agriculture, trade, and means of communication; they had charge of the poor, of charitable institutions, of prisons, and of public works

generally. They had also control of the resources of the provinces and imposed the rates. The insurrection of 1863 resulted in a complete change of affairs; by a series of measures the entire administration was reorganised and identified with that of the empire. In order to disarm and punish the Polish nobles and clergy who were in hostile opposition to the Russian Government, and who owned and swayed the peasantry, the Russian Government, by an ukase of the ^{19th February,}_{3rd March,} 1864, made it obligatory on the Polish proprietors to sell portions of their lands for the benefit of the peasantry; the latter were released from all their obligations to the lords of the soil, and the communal system was established among them; then followed alterations in the system of national education; the schools were taken from out of the hands of the Catholic clergy. Russian and German schools were opened side by side with the Polish, and reforms were introduced in the clerical body. The Polish budget was incorporated with that of the empire, and all the different branches of the administration were subordinated to the corresponding ministerial departments of Russia proper.

III.—*Weights, Measures, and Money.*

Russian into English and the Metric System—

I.—*Measures of Length.*

Russian.	English.	Metric.
1 foot = (12 inches)	= 1 foot	= 0·30479 mètre.
1 archine = ($2\frac{1}{3}$ feet)	= 0·77778 yard	= 0·71119 „
1 sagène = (3 archines) = (7 feet)	= $2\frac{1}{3}$ yards	= 2·13356 mètres.
1 verst = (500 sagènes)	= 0·66288 mile	= 1·0668 kilomètres.

II.—*Agrarian Measures.*

1 desiatine = (2,400 square sagènes)	= 2·69972 acres	= 1·0925 hectares.
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III.—*Solid Measures.*

1 chetvert	= 0·7216 quarter	= 2·0992 hectolitres.
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IV.—*Measures of Capacity for Liquids.*

1 védro	= 2·707 gallons	= 0·123 hectolitre.
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V.—*Measures of Weight.*

1 lb.	= 0·90282 lbs. avoirdupois	= 0·40951 kilogramme.
1 pood = (40 lbs.)	= 2·5794 stones	= 16·38 kilogrammes.
1 berkovétz = (10 pouds)	= 3·2243 cwt.	= 1·638 quintaux métriques.
1 ton = (12 berkovétz) = (120 pouds)	= 1·9346 tons	= 19·656048 „

Money.

1 rouble = (100 copecks)	= 0·1325 <i>l.</i> or 32 <i>d.</i> *	= say 3 frs. 33 c.
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IV.—*Population.*

It has been found impossible to arrive at anything more than a rough estimate of the population of Russia. The difficulty in this

* At the present average rate of exchange. The par exchange for a rouble is 38*d.*

case arises from a variety of circumstances, such as the diversity of the national elements of which the population is composed, the existence of large and various religious sects, the members of which defeat all attempts to obtain returns of their numbers; the uneducated condition of the masses, and the common practice which prevails amongst peasants in many districts of abandoning their homes for entire seasons in search of employment. For these reasons a simultaneous census is almost impossible in Russia, except in towns and in some of the better favoured rural districts, from which the people have no occasion to stray. Up to recent times the only process by which an estimate of the population has been obtained from time to time, has been that of "revision," but having merely a fiscal object, this applied only to the lower orders, that is, to all those lower classes which were not exempt from tithes and military service. In this process the female population was consequently not taken into account, and the returns were necessarily very defective, owing to the great advantage which an escape from the "revision" list afforded.

In addition to the process of "revision," a new system has been lately introduced for obtaining more correct information under this head, which is now being supplied through police courts and local statistical bureaux.

In explanation of the value of the statistics of the superficial area and population of Russia, I quote the following from the most recent and authoritative Russian work on the subject, compiled in 1871 by the superior officers of the Russian imperial staff:—

"Owing to the vast extent of the Russian empire, and the
"diversity of her population, statistical researches in that country
"are made under exceedingly great difficulties. Notwithstanding
"all the constant endeavours of the Government and of many
"private persons to collect statistical information and to put it in
"proper shape, we find it even now a most perplexing task to
"determine the extent and population of the empire; the figures
"which are here given must therefore be regarded as only approxi-
"mate.

"The most correct method of ascertaining the exact dimensions
"of Russian territory by provinces and districts, is by means of
"minute military topographical surveys. But only thirty provinces
"have thus been measured, and in the case of the rest the results
"here given have been arrived at through the medium of maps or
"of general land surveys."

The population of the Russian empire is calculated at 82,172,022 (*vide* Table I).

According to the enumeration of 1863, the population of Russia

proper* in Europe, was at that time 59,097,858 (which gave about 700 inhabitants to the German square mile), divided into the following classes:—

		Per Cent. of Total Population.
Nobility, gentry, officials.....	956,421 or	$1\frac{3}{4}$
Clergy with their families	607,554 „	1
Urban population.....	4,665,668 „	8
Rural „	47,929,697 „	81
Military.....	3,998,254 „	$6\frac{3}{4}$
Foreign subjects	75,175 „	$1\frac{1}{2}$
Not classified.....	865,189 „	
Total	59,097,858	100

The rural population is officially subdivided as follows:—

	Men.	Women.	Total.	Per Cent.
1. Rural population on crown domains	11,167,732	11,683,554	22,851,286	48
2. Rural population on private lands (ex-serfs)	10,673,632	11,080,767	21,754,399	45
3. Rural population, ap-panage and other lands	1,624,757	1,701,253	3,326,012	7
Total	23,466,121	24,465,576	47,931,697	100

The Russian provinces are of an immense size, the smaller ones equalling, nay, even exceeding, in size some of the independent States of Europe.

In most cases the dimensions of these provinces depend on the density of the population; thus, the central provinces being denser, are more limited in area. In Poland, the population being comparatively greater and more evenly distributed, the provinces are more equal in size.

The greater number of Russian provinces have a superficial area of from 800 to 1,000 German square miles, and from 1 to $1\frac{1}{2}$ million inhabitants, but these proportions vary so very much, that it is impossible to strike an average for any rational purpose.

It may be said that one-seventh part of European Russia is well-peopled, containing four-ninths of the entire population of the European provinces of Russia proper: that one-third part, with half the number of the total population, is tolerably populous, and that one-half of European Russia with one-ninth part of the total population is sparsely inhabited. The central, or *great*, and *little* Russian provinces, which constitute the heart and soul of Russia,

* Exclusive of Baltic provinces	1,812,250
„ Ural and Orenburg Cossacks	124,356
„ Kirghiz Nomads	134,000

are the most densely populated. These are the richest agricultural provinces, and they form the centre of the manufacturing industries of the Empire.

To the north and north-east of these provinces there is a very noticeable diminution in the proportion of inhabitants to area, which is attributable to the increasing sterility of the soil in those directions, and to climatic conditions. The sparseness of the population in the southern regions, is to be ascribed partly to historical causes, such as inroads of nomadic hordes, and to the woodless character of the vast plains which are very deficient in water.

According to my authority,* the town population of European Russia is about 4,794,175; in Poland, 1,003,465; in the Caucasus, 134,362; in Siberia, 113,236; and in Finland, 21,736; or say 8,157,462, or 10·4 per cent. of the entire mass of the people in the aggregate, which gives about 80 towns-people to 1,000 of the general population. This proportion will be found according to the foregoing statistics to vary very much in different parts of the empire, as, for instance, in Poland the ratio will be 215 towns-people to every 1,000 of the population; in Russia proper only 79. But as an illustration of the inaccuracy of the figures given even in the "Statistical Review," from which I quote, it must be mentioned that a simultaneous census taken in 1871 in Moscow, showed that the population of that town was more than 600,000 instead of 351,609, as stated in the "Review." I learn, too, from a Russian source, that when the census was taken, it was discovered that some 15,000 to 20,000 of the working classes hurriedly decamped from the town to escape the census, believing it to be in connection with some scheme for fresh imposts.

Ratio of the Sexes.

In European Russia the ratio of females to every 100 males is as follows:—

	In Towns.	In Rural Districts.	In Provinces.
In Russia	85·2	104·7	102·5
„ Poland	—	—	106·8
„ Finland	110·5	105·1	105·4
„ Siberia	78·4	97·1	95·9

In this respect, also, the ratio varies very much in different parts of Russia; so in the north-eastern provinces, such as Archangel, Olonetz, Vologda, Viatka, Perm, Nijni Novgorod, Kostroma, Yaroslaf, and Tver, the ratio of females to every 100 men, varies from 107 to 118, while in the south-western provinces,

* "Military Statistical Review of the Russian Empire, 1870," p. 134.

Bessarabia, Kherson, Podolsk, Kief, Ekaterinoslaf, Taurida, and Astrakhan, the ratio is from 88 to 99 females to 100 males.

In respect to this, Liefland and Courland are classed among the first named provinces, and St. Petersburg and Moscow are included in the second category. In the rest of the provinces of Russia, this ratio depends on their proximity to the zone in which the above provinces are respectively situated.

In these two zones, the northern and southern, the ratios are governed by the character of the industrial occupations; thus in the northern provinces, the nature of the occupations of the people is of a kind under which the men succumb more than the women; and in the southern provinces, the male population owes its greater proportion to a constant influx of more men than women in search of employment.

With regard to Poland, my authority affords no information under this head; but with respect to Finland, I find it stated that in the suburban districts the ratio is 105 females to 100 males, which in the towns increases to 110 females.

The following table is taken from a work on the population of Finland (by C. E. F. Ignatius, Chef par. Int. du Bureau de Statistique de la Finlande), Leipzig, 1869.

*Table showing the Proportion of the Sexes (Lutheran Population)
according to Ages.*

Ages.	Males.	Females.	Total.	Per Cent. on Total Population.
Above 1 year old	28,016	27,542	55,558	3·08
From 1 to 3.....	54,177	53,538	107,715	5·98
„ 3 „ 5.....	47,486	47,364	94,850	5·26
„ 5 „ 10.....	96,294	96,189	192,483	10·68
„ 10 „ 15.....	89,832	89,912	179,744	9·27
„ 15 „ 20.....	82,598	84,231	166,829	9·26
„ 20 „ 25.....	77,610	79,944	157,554	8·74
„ 25 „ 30.....	66,271	68,937	135,208	7·50
„ 30 „ 35.....	59,010	62,377	121,387	6·74
„ 35 „ 40.....	58,088	61,485	119,573	6·64
„ 40 „ 45.....	52,823	56,268	109,091	6·05
„ 45 „ 50.....	45,147	48,651	93,798	5·20
„ 50 „ 55.....	35,790	39,524	75,314	4·18
„ 55 „ 60.....	26,480	30,951	57,431	3·19
„ 60 „ 65.....	24,099	29,179	53,278	2·96
„ 65 „ 70.....	17,697	22,382	40,079	2·22
„ 70 „ 75.....	10,649	14,517	25,166	1·39
„ 75 „ 80.....	4,266	6,630	10,896	0·60
„ 80 „ 85.....	1,678	2,950	4,628	0·26
„ 85 „ 90.....	446	921	1,367	0·07
„ 90 „ 95.....	70	201	271	0·02
„ 95 „ 100.....	9	17	26	0·001
Above 100.....	1	1	2	0·001
Total	878,537	923,711	1,802,248	—

This gives us the following result. To every 100 individuals there were in 1865—

Ages.	Males.	Females.	Per Cent. of Total.
Above 15.....	35·9	34·1	34·9
From 15 to 60	57·4	57·6	57·5
Above 60	6·7	8·3	7·6

Continuing our inquiry into the statistics of Finland, we find among the male population from the age of 15—

	Per Cent.
Married.....	307,135 or 54·6
Widowers	32,377 „ 5·7
Bachelors	223,220 „ 39·7

Female population—

Married.....	307,622 or 50·5
Widows.....	75,858 „ 12·5
Spinsters	225,686 „ 37·0

V.—*Increase and Movement of the Population.*

I have already stated that the census of Moscow of 1871 showed that the population of that city was very much greater than had been supposed. In St. Petersburg it was the same. In the reign of the Empress Catherine II, an improved system of “revision” resulted in several millions being added to the known population of Russia (from 19 to 28 millions). Under these circumstances it is difficult to ascertain the natural increase. From 1722 to 1858, that is, during a period of 136 years, the population has grown from 14 to 74 millions. Russian conquests have doubtless had a great deal to do with it. But from the year 1815 to that of 1835, Russia did not make any acquisitions of territory, nor was there during that period any improvement in the system of “revision;” yet the sum total of the population during that period, rose from 45 to 60 millions, which constituted an increase of 1·44 per cent. per annum. From 1835 to 1851, the increase was 8,000,000; from 1853 to 1856, it was 6,000,000: for the period from 1858 to 1863 the average increase is calculated to have been 1·14 per cent.

Measures of precaution against epidemics and disasters of various kinds being almost totally neglected, the population of Russia suffers heavily whenever it is overtaken by any severe visitation. Failing harvests are, among others, unfailing causes of

mortality. Overlooking the annual fluctuations, the increase of births, deaths, and marriages for the first five decades of this century, may be thus tabulated:—

	Births.	Deaths.	Marriages.
	Per cent.	Per cent.	Per cent.
First decade	4·6	11·9	9·5
Second „	24·0	20·4	8·4
Third „	16·9	33·8	10·6
Fourth „	17·3	26·0	24·9
Fifth „	11·1	5·4	7·0

According to this table there were on the average 161 births to 100 deaths in the first decade, but in the last decade only 132.

The deduction to be drawn from Table II in the Appendix, with regard to the ratio of births according to the sexes (among the Lutheran population) is, that although the male births have always preponderated, the proportion of girls born to every 100 boys, has greatly increased, viz., from 89·2 to 95·4. At the same time it will be found that to every 100 males the ratio of deaths among the opposite sex increased almost in the same proportion.

VI.—*Fecundity of the Population and Distribution.*

The average number of births per annum in European Russia for the period from 1859 to 1863 inclusive, was 3,022,746, giving a proportion of 5·04 births to every 100 of the population.

The Russian population is composed of three large groups: *Great Russians*, or *Veliko-Russ*; *Little Russians*, or *Mało-Russ*; and *White Russian*, or *Bélo-Russ*. The first, numbering 35,000,000, occupy the central provinces; the second, numbering about 11,000,000, compose the bulk of the population of Poltava, Kharkof, Chernigof, Kief, Volhynia, Podolsk, Ekaterinoslaf, and the Taurida; the White Russians, about 3,000,000, inhabit the provinces of Mohilef, Minsk, Vitebsk, and Grodno. Besides these three groups of Russians proper, there is a great variety of national elements in the general population of the Russian empire: for instance, *Finn*s (3,038,000), who are divided into two groups, *western* and *eastern*; the western group is composed of *Esthonians*, *Livonians*, *Karelians*, and *Laparis*; the eastern group is composed of the tribes of *Mordva*, *Cheremisses*, *Zyrians*, *Permiaks*, *Votiaks*, *Chuwashes*, and *Voguls*. Next follow Lithuanians, 2,343,000; Jews, 1,631,000; Tartars,

2,500,000; not to mention Poles, Greeks, Germans (colonists), Armenians, and a variety of others.

VII.—Army and Navy.

The land forces of Russia are composed of *regular* and *irregular* troops, and of a militia which is called out in case of emergency.

The complement of the army, as of the navy too, is made up by means of levies of a certain number of males from every 1,000 males of the population: these levies are *ordinary*, *i.e.*, not more than 6 in a 1,000; *extraordinary*, from 7 to 10 in 1,000; and *exceptional*, more than 10 in 1,000.

At the present time, the regular troops number 730,000 rank and file, capable of being increased from reserves on furlough to 1,173,000; and these reserves make up more than the number required to place the Russian army on a war footing.

The following is the composition of the regular army:—

<i>Peace Footing.</i>		<i>War Footing.</i>	
Battalions	852	Officers.....	39,380
Squadrons	281		
Guns	1,422		
Officers	33,043		
Rank and file	732,829	Rank and file	1,173,879

There are at present 70,000 Cossacks on active service; this number is trebled in case of need, and can on an emergency be increased to a far greater extent.

The cost of the maintenance of each soldier may be said to be about 15*l*.

The *Baltic fleet* is composed of 114 vessels, of which 25 are iron-clads, and of which 8 are frigates and 17 monitors. The *Black Sea* fleet consists of only 31 vessels, carrying 72 guns altogether. The fleet in the Pacific has increased since 1862 from 15 to 30 vessels. The Caspian flotilla consists of 14 vessels.

Finland has a military system of her own. She is obliged, at the demand of the Grand Duke of Finland (the Emperor), to bring into the field a certain number of men, on the Swedish “Indelta” principle. This principle is that every district is bound to supply a certain number of soldiers, and to pay them, while the State provides for their material wants. In this way, during the Crimean war, Finland raised a force of 8,000 men; but she might be called upon to produce 20,000.

Besides these “indelta” battalions, which were all disbanded in 1868 on account of the terrible famine of that period, Finland maintains a battalion of *tirailleurs* numbering 635 men, and a corps of marines numbering 93 men. The census, taken in Helsingfors

on the 1st of February, 1870, showed that all these men were able to read, and that the numbers that could write were 535 tirailleurs and 60 marines.*

VIII.—*Land Tenure; Serfs, 1861; Modes of Cultivation in Provinces.*†

The Emancipation Act of ^{19th February,}_{3rd March,} 1861, freed from serfage 22,000,000 of peasants attached to the lands of the aristocracy and gentry of Russia proper, and materially affected the peasantry of the crown (23,000,000) and of the appanages (3,000,000),—for whether serf, crown peasant, or appanage peasant, the Russian husbandman was throughout all Russia in a condition of villeinage, and at the mercy of those above him.

It was ascertained by the emancipation committee that the number of proprietors who owned serfs in Russia proper was 103,158. Of these 23 per cent. owned more than 100 male serfs; 41½ per cent. owned an average of about 21 serfs, and 35½ per cent. owned between 21 and 100 “souls.” But of the 22,000,000 of serfs belonging to landed proprietors, only 10,000,000 were males, of whom again three-quarters of a million were domestic serfs—and as such not in the occupation of land—and half-a-million were attached to various mines and works.

The total area of land belonging to the proprietors was 301,000,000 acres, of which 100,000,000 acres were held by their serfs, either at a rent in money, or under a mixed liability in money and service. Thus each male serf had the usufruct of about ten acres of land, for which he paid a quit-rent in proportion rather to the necessities of his lord than to the productiveness of the soil. Where he rendered no service, the serf paid a quit-rent at the mean rate of 2s. 3d. per acre; in the industrial provinces, however, it was 2s. 9d., and sometimes even so high as 5l.

Under the Emancipation Act the peasant serf obtained the cession of the perpetual usufruct (tenancy) of his homestead and of a certain allotment of land, either by mutual agreement with his lord, or failing that, on conditions fixed by law. This cession was obtained by means of a “redemption operation,”‡ in which the peasants were assisted by an advance of money from the Government, which was to be repaid in the course of forty-nine years under a system of poll taxation. The interest of the exchequer was protected by the introduction of a system of collective responsibility

* Dr. O. Donner, Helsingfors, from a private communication.

† The information under this head is taken from “Reports from Her Majesty’s Representatives respecting the Tenure of Land in the several Countries of Europe, 1869-70.” Part II, Russia, by Mr. Michell.

‡ See Table III (Financial Balance Sheet).

on the part of the emancipated serfs. That collective responsibility was laid on village communes, which, as corporate bodies, became the purchasers of the land. In this manner the peasants became individually tenants under communes.

In order, on the other hand, to prevent the dissolution of the commune—the administrative and financial unit—the Emancipation Act contained a variety of subtle provisions, calculated to prevent the peasants from leaving the soil, to which they are consequently almost as firmly attached as in 1592.

Under this new order of things, a communal and cantonal self-government became established; but in the report from which I quote, it is argued that the communal system is breaking up in households where the patriarchal authority of the father of a family sets at nought the rights of his married sons. The communal system, observes Sir Andrew Buchanan, in his covering letter to Mr. Michell's report, "is considered by many Russians to have "served its time, and is likely soon to die out, though they defend "it as a necessary measure of police, alleging that the tranquillity "and well being of the country might have been seriously com- "promised if complete personal liberty had been at once granted "to the peasantry."

Since the Emancipation Act of 1861 the cultivable lands of Russia proper in Europe have been approximately distributed as follows :—

	Per Cent.
Town lands, about	0·4
Crown ,, 	33·0
Appanage ,, 	1·6
Lands attached to mines	3·5
,, held by peasants :	
1. Crown peasants	14·7 per cent. }
2. Appanage ,, 	0·9 ,, } 20·6
3. Former serfs of landed proprietors 5·0 ,, }	
Lands held by landed gentry and nobility	19·7
,, other proprietors, or not surveyed	17·7
,, colonists, Cossacks, &c. 	2·7

One-third of the cultivable land in Russia proper is therefore held by the State; one-fifth by landed proprietors; one-fifth by the peasantry, and the remainder under a variety of forms by colonists, churches, &c.*

The principal modes of cultivation in European Russia are (1), the triennial rotation of crops; and (2), the long fallow system. There is another ruder form of agriculture, that of clearing woods by fire, and sowing crops in the ashes without any preliminary

* See Appendix, Table IV, showing distribution.

ploughing. This primitive system is adopted in the thickly-wooded northern provinces of Archangel, Olonetsk, and Vologda, and in others where it meets with the triennial rotation of crops so general throughout the central more thickly-populated provinces.

The long fallow (seven to twelve years) mode of cultivation is almost exclusively pursued in the southern provinces of Bessarabia, Kherson, Ekaterinoslaf, Taurida, Don-Cossack country, Astrakhan, Samara, and Saratof, of which the peculiar features are thinness of population, absence of woods, abundance of steppe or grassy plains, and an extensive area of cultivable land, as will be seen from the following table:—

	Popula- tion per Square Verst.	Proportion of Woods to Other Lands in 100 Desiatinas.		Square Versts per Village.	Inha- bitants per Village.	Cultivated Lands	
		Woods.	Other Lands.			To One Village.	To One Inha- bitant.
						Desia- tinas.	
Bessarabia	33'4	9'0	91'0	24'0	653	1,824	2'5
Kherson	21'0	1'3	98'7	25'0	383	2,128	4'1
Ekaterinoslaf	20'3	1'4	98'6	24'2	436	2,031	4'1
Taurida	11'3	5'2	94'8	27'0	251	1,921	6'2
Don-Cossack country	6'8	2'2	97'8	56'0	377	5,155	13'3
Astrakhan	1'9	0'6	99'4	333'0	809	3,088	3'2
Samara	12'1	11'9	88'1	63'1	734	2,113	2'8
Saratof.....	23'5	10'9	89'1	34'1	711	2,539	3'1
Averages.....	12'9	4'7	95'3	44'0	502	2,615	4'5

Of the total quantity of arable land in European Russia (inclusive, in this case, of the Baltic provinces), viz., about 88,000,000 desiatinas (252,000,000 acres), nearly 75,000,000 desiatinas (215,000,000 acres) are cultivated under the three-field system, which is, therefore, the form of agriculture which has most influence on the production of the country.

Owing to the great variety of the climate and soil of Russia, the greatest diversity exists in the proportion between tillage and grass lands in the several provinces of the empire; thus, while the general average proportion of tillage lands in Russia is almost 20 per cent., the quantity of land under cultivation in the province of Tula is 70 per cent., whereas in Astrakhan it is only 1 per cent., and in Archangel 6'1 per cent.

The grass lands are distributed with the same irregularity. The general mean proportion is about 12 per cent., while the maximum proportion is as high as 62 per cent. (in the country of the Don Cossacks); at the same time the minimum proportion is about 1 per cent. (Vologda).

The proportion of forest land varies from 0·6 per cent. (Astrakhan) to 92 per cent. (Vologda), the mean being about 40 per cent.

Table showing the Proportion of Tillage Lands to 100 Desiatinas of General Area.

	Per Cent.		Per Cent.		Per Cent.
Tula	70·0	Kherson	45·0	Don - Cossack } country	25·5
Kursk	67·0	Poltava	44·0	Minsk	24·9
Voronej	60·2	Kazan	44·0	Viatka.....	24·0
Tambof	60·0	Vladimir	43·8	Kostroma	20·6
Kief.....	57·0	Vilna	42·9	Taurida	17·5
Riazan.....	56·0	Grodno	41·3	St. Petersburg ...	16·3
Kovno.....	55·3	Moscow.....	38·0	Samara	13·8
Orel.....	55·0	Nijni Novgorod...	38·7	Novgorod	12·4
Chernigof	54·0	Smolensk	38·1	Ufa	10·3
Kaluga	53·7	Bessarabia.....	37·8	Perm	9·7
Podolia	52·0	Yaroslaf	35·0	Orenburg	5·6
Penza	50·6	Volhynia	33·7	Vologda	2·2
Simbirsk	47·9	Pskof.....	32·3	Olonetsk	2·1
Kharkof	46·0	Ekaterinoslaf ...	32·2	Astrakhan	1·1
Mohilef	45·1	Tver	31·7	Archangel	0·1
Vitebsk	45·5	Saratof	26·6		

In twelve provinces of Russia the proportion of tillage lands to the general area is about 50 per cent. (or on an average 57·43 per cent.); these are the central black soil provinces, and partly those of the Ukraine and south-west of Russia. The corresponding average proportion in Poland is 50·2 per cent.; in Finland 1·2 per cent.; and in the Baltic provinces nearly 20 per cent. The next group (twenty-four provinces) comprises the districts where the proportion of tillage lands ranges between 20 and 50 per cent. (or on an average 36 per cent.), they are situated on the borders of the more favoured provinces; the proportion of tillage lands is under 20 per cent. throughout the north of Russia proper and in the eastern provinces beyond the Volga.

IX.—*Education.*

Popular education in Russia is under the direction of the Ministry of Public Instruction. At the same time almost every Department of State has its own educational establishments—special and general. The educational systems in the Caucasus and in the Grand Duchy of Finland, are perfectly independent of the control of the Ministry of Public Instruction. The kingdom of Poland, however, forms an educational circuit, over which the Ministry has exercised its authority only since 1866.

With reference to the educational establishments under the

immediate control of the Ministry, European Russia is divided into nine circuits, 1. St. Petersburg; 2. Moscow; 3. Kazan; 4. Kharkof; 5. Odessa; 6. Kief; 7. Vilna; 8. Riga; and 9. Warsaw. Each of these is entrusted to a chief superintendent. The educational establishments of Siberia are likewise subordinate to the Ministry, but through the two Governors-General (of eastern and western Siberia) with school councils.

The number of establishments for general, elementary, and special instruction in Russia on the 1st January, 1869, was 21,351, and the number of students of these three categories, was 829,928.

Table showing the Number of Educational Establishments, and the Number of Students in Russia on the 1st January, 1869.

Establishments.	Number of Establishments.	Number of Students.
A. For General Education—		
Universities	9	6,175
Lyceums	3	290
Gymnasiums and pro-gymnasiums	150	38,869
District schools	458	27,276
Girls' schools, 1st class.....	61	7,412
" 2nd "	127	8,511
" 3rd "	300	13,313
Private boys' schools, 1st class	27	2,430
" 2nd "	60	3,025
" 3rd "	275	7,177
Private girls' schools, 1st "	38	3,324
" 2nd "	140	6,016
" 3rd "	346	9,605
Institutions for instruction of females, Empress } Maria's	57	9,977
Schools attached to foreign houses of worship :		
1st class	6	2,461
2nd "	19	2,123
3rd "	102	22,168
Total	2,178	150,622
B. Elementary Schools—		
Public schools	17,678	598,121
Jewish "	1,083	27,594
Foreign "	14	1,454
Industrial "	44	2,001
Sunday schools (in Poland, in Baltic provinces)	117	7,233
Training schools for teachers	31	1,350
Total	18,967	637,753
C. For Special Subjects.....		
Total	206	41,553
Total	21,351	829,928

The amount expended by the Russian Government on educational establishments exceeds 28,000,000 of roubles, of which sum

only 11,000,000, or 40 per cent., is laid out by the Ministry of Public Instruction on the institutions under its particular charge. Exclusive of Government support, provinces and towns contribute above 71,000 roubles towards elementary education; and from 1866 to 1870, private donations in the cause of education amounted to nearly 2,000,000 of roubles.

Table showing the Sums Expended by the Russian Government on Education in 1870.

	Charged to Imperial Budget.	From Special Sources.	Total.
Ministry of Public Instruction	10,130,528	1,692,047	11,822,575
Department of the Holy Synod	1,239,225	2,945,000	4,184,225
Ministry for War	5,032,401	464,000	5,496,401
„ of Marine.....	376,031	6,471	382,502
„ „ Finances	353,233	—	353,233
„ „ State Domains	716,491	3,261	719,752
„ „ Interior	74,480	—	74,480
„ „ Ways of Communication ...	111,751	1,740	113,491
„ „ Justice.....	407,874	—	407,874
Department of the Empress Maria.....	2,593,022	1,551,493	4,144,515
Caucasus.....	289,700	41,744	331,444
Finland	338,098	—	338,098
Total	21,662,831	6,705,756	28,368,590

The peasant schools in towns and villages, in the thirty-five purely Russian provinces, are 9,955 in number, with 280,000 pupils. This gives an average of about thirty pupils to each school. About nine-tenths of this number of schools are established in villages, and one-tenth in towns; 54 per cent. of these schools are attended exclusively by boys, and 6 per cent. by girls; the remainder, or 40 per cent., are mixed schools. So that 84 per cent. on the general number of pupils are boys, and 16 per cent. girls. Further, supposing the studies of the girls and boys to be equally successful, it appears that to every five boys able to read and write, there is, according to the numerical proportion of pupils of both sexes, only one girl possessing equal qualifications.

In relation to the entire population of these thirty-five provinces, there is one school to 4,700 individuals, and one pupil among every 168 inhabitants; and, taking into consideration only the male population, we find one pupil to every 100 males—a calculation which

corresponds exactly with the fact practically ascertained in Russia, that among every 100 recruits levied in that country only one man can read and write.*

In Finland the people are better cared for as regards their education; there are Sunday schools in most parts of the country, and nearly every peasant can decipher the written notices posted on the church doors. In a great many parts the villagers subscribe in bodies to a newspaper, and so instruct and amuse themselves indoors. The circulation of the Finnish papers may be put down at from 25,000 to 30,000 copies, or it may be said that the ratio of publications to inhabitants in Finland, is as 1 to 70, or at the lowest 1 to 100.†

X.—*Publications.*

The following table, from the reports of the department regulating the affairs of the press, shows the number of standard works and periodicals issued in 1868.

Where Published.	Standard Works.					
	Free from Censorship.		Under Censorship.		Total.	
	Works.	Pages.	Works.	Pages.	Works.	Pages.
In St. Petersburg.....	295	6,676	419	2,438	714	9,114
„ Moscow	243	3,059	282	1,218	525	4,277
„ other towns.....	—	—	853	2,500	853	5,490
Total	538	9,735	155	6,158	2,092	15,881

Where Published.	Periodicals, Newspapers, and Journals.			
	Under Preliminary Censorship.	Without Censorship (by Law of 1865).	Independent of Censorship.	Total.
In St. Petersburg.....	63	29	31	123
„ Moscow	5	15	11	31
„ other towns	39	85	40	168
Total	107	129	82	318

It appears from this table that above 2,000 works were published

* It has been found within the last two years that the proportion of recruits able to read and write is 11 among every 100.

† From a private communication from Dr. O. Donner, Helsingfors.

in Russia during the course of the year, of which only one-fourth were not subjected to censorship. Three-fifths of this number, or 1,255 works, were published in St. Petersburg and Moscow alone, and the remaining two-fifths, or 837 in other parts of Russia, but to judge by the total number of pages printed, the literature of the provinces, as contrasted with the production of the press of the two capitals, appears to still greater disadvantage.

But quoting from a later source of information on the production of the press of the two capitals alone, we obtain a still better idea of the statistics of literature in Russia.

The number of works published in Moscow and St. Petersburg during the five years period from 1865 to 1869 inclusive, was 14,610, from which we may deduct 3,600 musical compositions and engravings; this leaves 11,000 volumes of books. With regard to contents, about 5,000 of these are of an undefined character, and come under a general heading of *various*, while about 6,000 are thus classified: on realistic and technical subjects, 1,891 volumes; literary works, 1,795; on politics, 1,109; on elementary subjects (grammars, alphabets, &c.), 949; and philosophical works, 221.

This is not much for a reading population of say 10,000,000 of Russians. The deficiency is, however, made up by the importation of foreign works, as shown in the following table, which refers to 1868.

	Number.	Subjects.	Admitted.		Prohibited.	Total.
			In Extenso.	In Part.		
German	1,829	Theological	349	11	18	378
French.....	1,507	Philosophical ...	217	4	33	254
English	367	Historical	478	25	9	512
Hebrew	211	Political.....	264	11	31	306
Czeck	63	Novels, &c.	1,272	23	23	1,318
Greek	29	Poligraphical ...	652	32	13	697
Polish	26					
Slavonian	2					
Roumanian.....	1					
Total	4,035	Total	3,232	106	127	3,465

There is a discrepancy in these totals, which is not explained in the work from which the table is borrowed.

The following table, however, gives a still better idea of the study of foreign literature in Russia. It shows the total number of volumes, and of copies of prints, &c., imported and subjected to the various committees of censors:—

Committees of Censors at	Admitted in Extensio.		Admitted with Eliminations.		Prohibited.		Total.	
	Copies.	Volumes.	Copies.	Volumes	Copies.	Volumes	Copies.	Volumes.
St. Petersburg	827,673	1,251,603	3,421	6,714	1,518	2,587	832,615	1,260,902
Riga.....	572,871	1,668,889	728	7,406	305	705	573,904	1,675,000
Odessa.....	136,804	297,421	213	218	37	89	137,054	297,726
Revel	44,591	79,959	443	798	66	75	45,100	80,833
Vilna	48,302	54,722	2,973	3,301	148	175	51,423	58,198
Kief.....	12,480	18,809	36	76	70	122	12,586	19,007
Dorpat.....	19,453	69,605	—	—	3	17	19,456	69,622
Moscow	71,300	98,294	280	437	179	396	71,759	100,127
Total	1,733,474	3,539,302	8,097	18,950	2,326	4,166	1,743,897	3,562,418

It has been shown that there are 318 periodicals and papers published in Russia. These are classified as follows:—

Character of Journal or Paper.	Number.	Periods of Publication.	Number.	Languages.	Number.
Government gazettes	12	Daily	34	Russian	264
Political.....	26	5 times a-week	2	Russian and local	4
Scientific, literary, and political } journals.....	7	4 „	4	German	29
Literary, artistic, &c.	23	3 „	17	Lettonian	6
Scientific and special	83	2 „	37	Esthonian.....	5
Popular and for } children.....	17	Weekly	94	Ancient Hebrew	2
Provincial.....	39	Fortnightly ...	35	Hebrew-German	1
Local for reference ...	10	Monthly	66	French	6
„ official.....	62	Irregularly ...	29	Latin	1
Diocesan, &c.	39				
Total	318	Total	318	Total	318

The only papers and journals that have a circulation in Russia, are those of St. Petersburg and Moscow, but the St. Petersburg periodicals are four times as numerous as those of Moscow, and of these 125,056 copies are distributed over the whole empire, the subscribers averaging 1 to every 604 of the population. But this ratio varies in the different provinces from 1 in 2,523 in Finland, or 1 in 1,962 in Ufa, to 1 among 38 in St. Petersburg. This is taken from the “Journal of the Ministry of Public Instruction” for 1870.

XI.—*Products of Russia, Natural or Agricultural.*

The chief products of the soil are corn, flax, and hemp, after which come beetroot and tobacco.

The yearly yield of corn in Russia is calculated at nearly

266,000,000 chetverts (about 186,000,000 quarters), of which 70 per cent. is grown in the black soil provinces, by a population of 36,000,000, which gives about 5 chetverts (28·85 bushels) per head. In the other provinces of Russia, comprising a population of 25,000,000, the yield is only $3\frac{1}{2}$ chetverts (20 bushels) to each inhabitant. It is thus comparatively less than half the yield obtained in England or Saxony, and smaller than in any other country of Europe. Nevertheless, with a smaller expenditure of capital and labour upon it, the cultivated soil of Russia provides 9 hectolitres of corn per head of the population; in Switzerland, France, and Prussia, the yield is only 6 hectolitres per head; in Great Britain not more than 4·9. Under careful cultivation the produce of Russia would be double what it is at present, and sufficing for a population of 124,000,000, would leave five times as much for foreign exportation as the country now sends abroad, viz., about 9,000,000 chetverts (about 6,500,000 quarters) per annum.

Exports of Grain from Russian Ports in 1867-70.

	1867.	1868.	1869.	1870.
	Chetverts.	Chetverts.	Chetverts.	Chetverts.
Rye	3,368,611	1,867,597	1,154,507	3,040,471
Wheat	8,612,351	6,754,452	6,366,816	9,642,290
Oats	1,175,811	2,278,710	1,550,704	4,172,905
Other grain	—	—	1,265,295	4,205,348

Mr. Wilson, of the Russian Statistical Department, calculates that the home consumption of corn is about 175,000,000 chetverts (120,000,000 quarters), or about 3 chetverts ($17\frac{1}{4}$ bushels) per head of the population of Russia in Europe.

The distillation of spirits consumes about 9,250,000 chetverts (6,500,000 quarters) of corn and potatoes.

The average annual excess of production over consumption, after deducting those two items, is about 35,500,000 chetverts, or 25,000,000 quarters.

The quantity of flax produced is 12,000,000 poods, and 2,500,000 chetverts of flax seed (or 1,750,000 quarters). Pricing the first at 4 roubles per pood, and the latter at 10 roubles per chetvert, the value of the flax produce of Russia amounts to 73,000,000 roubles, or with the fibre 75,000,000 roubles.

The hemp produce is about 6,000,000 poods, and hemp seed 3,500,000 chetverts (2,450,000 quarters), valuing together about 25,000,000 roubles.

Beetroot 7,000,000 berkovêts (of 10 poods).

Tobacco 3,000,000 poods, valued by M. Von Buschen at 3,000,000 roubles.

Cotton, about 150,000 poods, is grown on the Caucasus to the value of 1,500,000 roubles.

Wine from grapes grown in the south 17,000,000 vedros (about 20,000,000 gallons).

Silkworms reared in Kherson 500 poods.

Beeswax 200,000 poods; honey 700,000 poods.

The number of cattle in Russia, as shown in the statistical work of 1870, is as follows:—

Horses in the Russian empire.....	20,000,000
Horned cattle	28,500,000
Sheep.....	64,500,000
Goats	1,000,000
Pigs	11,000,000
Reindeer, trained	308,000
Camels (exclusive of Siberia and Turkestan)	62,250
Buffaloes	1,000
Mules and asses	—

XII.—*Industries.*

The manufacturing industry of Russia has very much increased of late years, more scope having been given to private enterprise. From the tables referring to 1866 we glean the following information as to the number of manufactories (in groups) and of hands employed, and as to the value of the manufactured produce:—

Groups.	Manufactories.	Hands Employed.	Value of Manufactured Produce.
			Roubles.
I. Working in textile fabrics	9,080	319,503	255,083,555
II. „ wood	3,849	15,400	9,246,434
III. „ animal products	8,595	47,873	67,264,426
IV. „ mineral „	8,337	59,106	20,600,195
V. „ metal.....	1,739	137,991	71,908,923
VI. „ chemical products	1,570	14,413	9,521,750
VII. „ tobacco	5,402	28,795	13,810,367
VIII. „ nutrimental products	46,106	292,289	201,331,521
IX. „ various materials	312	3,585	1,870,901
Total;	84,944	919,025	650,638,062

Another table is given in the Appendix, where these manufactories will be found separately classified. At the same time it will

not be supposed that the sum of 650,638,062 roubles represents the value of all the manufactured products of the country. Hundreds of thousands of the people work at their own homes and in various establishments, in turning out articles in flax, cotton, wool, leather, wood, and metals, and the value of their labour does not enter into the above estimate, nor can it be estimated with any accuracy. Roughly calculated, the produce of Russian industry is valued at from 920,000,000 to 1,000,000,000 of roubles.

XIII.—*Foreign Trade.*

The geographical position of Russia is unfavourable to the development of commercial relations with other European States. Her Baltic ports, nearest to the countries in which there is a demand for her grain, are closed for nearly five months out of the twelve. Her water-ways are very defective. Her main artery—the Volga—falls into an inland lake, and communicates with the ocean by means of an imperfect canal system. The only region of the globe towards which Russia can act as a medium for the supply of merchandise is Asia; but this, too, is separated from her by uninhabited deserts and steppes, poor in vegetation, and traversable only with great difficulty.

To add to all this, her customs system, up to the middle of the present century, almost excluded foreign imports, and when this was modified in 1857, the Government substituted for a system of prohibition one of the strongest protection. The foreign trade of Russia still consists almost exclusively in the exchange of her raw and half manufactured material, for foreign manufactured goods.

An impetus has, however, been given to the foreign trade of Russia by the opening of numerous railways, and by the revised tariff which came into operation on the 1st of January, 1869.

Taking 100 to represent the value of the foreign trade of Russia for a period of five years from 1819 to 1823, the commercial operations for the subsequent periods may be thus expressed:—

1819-23	100	1844-48	189
'24-28	93	'49-53	205
'29-33	116	'54-58	226
'34-38	127	'59-63	302
'39-43	158	'64-68	404

The value of the trade for the five years between 1864-68, is taken at 5.67 roubles per head of the population; this is very small as compared with the value of English trade, which in Russian money is 125 roubles; in France it is 42 roubles; in the Zollverein 32 roubles; in Italy 16 roubles; in Austria 11.50 roubles.

The increase of the export trade may be thus compared with that of the import trade for the same period as above:—

	Exports.	Imports.		Exports.	Imports.
1819-23.....	100	106	1844-48.....	187	164
'24-28.....	100	85	'49-53.....	197	191
'29-33.....	116	101	'54-58.....	208	217
'34-38.....	123	121	'59-63.....	306	304
'39-43.....	154	148	'64-68.....	384	388

This shows that the exports were in excess of the imports, and that, too, according to the tables in the official returns of trade, to the enormous amount of $525\frac{1}{2}$ millions of roubles. In reality, however, this was not so, for many circumstances combined to render it impossible for the custom houses to form anything approaching a correct estimate of the value of the imports into the empire, which, owing to smuggling, were actually much greater than was officially known.*

The years 1835, 1848, 1849, 1851, 1855, 1863, and 1867, did, however, show an excess of imports over exports.

The value in roubles of the foreign trade of the empire for the years 1867-68, was as follows:—

	1867.	1868.*
Imports	298,845,818	300,280,041
Exports	259,203,628	232,378,523
Total	558,049,446	533,658,564

* Exclusive of the Central Asiatic trade.

Or to particularise:—

	1867.		1868.	
	Merchandise.	Specie.	Merchandise.	Specie.
Imports.....	265,280,555	33,565,263	260,923,532	39,276,409
Exports.....	244,794,214	14,409,414	226,595,873	5,783,650

* Since 1865, a system of official valuation has been introduced in the "Russian Trade Returns," which renders them almost useless as regards the estimation of the value of goods imported.

Russia's direct commercial relations in Europe are, in regard to exports, mainly with England, Prussia, and France, which absorb 77·6 per cent. of her exports. In regard to imports, her trade is almost confined to England and Prussia, which supply her with 72·2 per cent. of her imports from Europe. And in this respect Prussia is in advance of Great Britain, owing to the railway communication which has placed Russia in commercial dependence on the German empire. What Trieste is to the European Continent, Verjbolovo on the Russo-Prussian frontier is to Russia. The latter is the emporium of all merchandise destined for the Russian empire, and coming from almost every country in Europe.

The Asiatic transit trade, distinct from that with Central Asia, through the Caucasus (conducted with Persia), amounted in 1867 to the value of nearly 8,000,000 roubles, when the imports from Persia amounted to not more than 332,000 roubles. In 1867 this trade fell off to a little over 2,000,000 roubles.

This trade will doubtless be stimulated by the railway now ready from Poti, on the Black Sea, to Tiflis.

The trade with the Khanats of Central Asia is valued at about 30,000,000 roubles, the exports from Russia being to the amount of 17,000,000 roubles, and the imports 13,000,000 roubles.

Here, too, may be noticed in passing, the commercial relations opened between Odessa, India, and China, by way of the Suez Canal. But that the enterprise will succeed in any great measure except under a system of heavy subsidies is a matter of doubt, for English and German shipping can always afford to take cargoes at cheaper freights; Russia has no commercial fleet, and her people are not of the mould that makes competent seamen. Moreover, railway communication through the Caucasus with Persia, which we may expect to see established before ten years elapse, will satisfy all her ambition as regards relations with the East.

The Finlanders alone have a commercial fleet of any importance. They have 692 vessels altogether, among these are 73 steamships and 492 sailing ships for long passages, and 34 steamers and 93 sailing vessels employed in the inland waters.

The condition of the trade with Central Asia, is illustrated by Table V, Appendix, taken from a recent work on Central Asia by Captain Kostenko.

XIV.—*Railways.*

The number of railways opened in Russia up to the 1st September, 1871, was forty, and this network measured 11,138 versts. The first Russian line was opened in 1838, the second in 1851. The year 1862 marked the great era in railway building in Russia,

and from that time to the present day, railway communication has enormously increased, especially in a southerly direction.

The total number of passengers conveyed on the Russian lines from the 1st January to the 1st September, 1871, was 12,114,077; the quantity of merchandise and luggage transported was 582,543,843 poods (or 9,344,455 tons), and the gross receipts for the same period were 62,325,896 roubles.

The capital engaged in railway operations of private companies in Russia to the end of 1870, amounted to 918,230,717 roubles, and the Government guarantees covering 11,169 versts of rail amounted to 33,939,026 roubles.

XV.—*Finance.*

The reports of the Finance Minister for the years 1870 and 1871, show the following totals of revenue and expenditure:—

	Income—Net Receipts.	Expenditure.
	Roubles.	Roubles.
1870.....	422,479,348	476,728,317
'71.....	438,570,674	489,012,702

The ordinary net revenues of the empire from direct and indirect taxes, excise, customs dues, &c., were in 1870 386,123,508 roubles, and in 1871 403,741,877 roubles.

The public debt in 1869 amounted to 898,413,080 roubles; but in that year an amortisation commission was established, and a sinking fund was formed of 60,000,000 roubles, and the result of this has been a reduction of the debt to 802,816,762·28 $\frac{3}{4}$ roubles.

APPENDIX.

TABLE I.—*Population of European Russia for 1867, as Distributed throughout the Various Provinces.*

Provinces.	Dry Superfices in Geographical Square Miles.	Population.	Inhabitants per Square Mile.
Archangel	13,681	275,779	20
Astrakhan	3,987	573,954	143
Bessarabia	649	1,052,013	1,596
Vilna	700	973,574	1,260
Vitebsk	816	834,046	1,020
Vladimir	860	1,239,051	1,400
Vologda	7,193	974,585	133
Volhynia	1,295	1,643,261	1,260
Voronej	1,198	2,068,998	1,729
Viatka	2,605	2,347,796	843
Grodno	680	958,952	1,362
Country of the Don	2,886	1,010,135	346
Ekaterinoslaf	1,225	1,281,482	1,042
Kazan	1,116	1,670,337	1,496
Kaluga.....	561	984,255	1,755
Kief.....	924	2,144,276	2,316
Kovno	736	1,131,248	1,525
Kostroma	1,449	1,101,099	759
Courland	492	597,288	1,203
Kursk	841	1,866,859	2,103
Liefland	826	990,784	1,198
Minsk	1,695	1,165,588	684
Mohilef	868	908,858	1,042
Moscow	601	1,678,784	2,777
Nijni Novgorod	923	1,262,913	1,367
Novgorod	2,152	1,016,414	462
Olonetzk	2,376	302,490	127
Orenburg	4,418	840,704	241
Orlof	849	1,578,013	1,860
Penza	689	1,197,393	1,693
Perm	6,046	2,173,501	360
Podolsk	763	1,946,761	2,548
Poltava	903	2,002,118	2,213
Pskof	798	717,816	905
Riazan.....	761	1,438,292	1,887
Samara	2,885	1,743,422	570
St. Petersburg.....	812	1,160,930	1,605
Saratof.....	1,514	1,725,178	1,124
Simbirsk	883	1,192,510	1,327
Smolensk.....	1,012	1,163,594	1,147
Taurida	1,106	658,549	593
Tambof	1,202	2,055,778	1,713
Tver.....	1,157	1,521,577	1,252
Tula.....	557	1,154,292	2,054
Ufa	2,044	1,297,577	586
Kharkof	988	1,681,486	3,701
Kherson	1,306	1,497,995	1,158
Chernigof	951	1,560,378	1,638
Esthonia	358	322,668	901
Yaroslaf	621	999,383	1,543
Total	86,039	63,658,934	731

TABLE I.—*Population of European Russia for 1867—Contd.*

Provinces.	Dry Superfices in Geographical Square Miles.	Population.	Inhabitants per Square Mile.
Kingdom of Poland	2,216	5,705,607	2,569
Finland	6,835	1,843,245	289
Caucasus	7,938	4,661,824	583
Russia in Asia	271,321	6,302,412	23
Grand total	374,349	82,172,022	220

TABLE II.—*Table of Births, Deaths, and Marriages for the First Five Decades of this Century.*

	Births.	Deaths.	Excess of Births over Deaths.	Marriages.	Births to 100 Deaths.
1800-10....	13,181,151	8,171,241	5,099,910	3,032,250	161·3
'11-20....	13,789,318	9,144,528	4,644,790	—	150·7
'21-30....	17,099,214	11,017,803	6,081,411	3,609,589	155·1
'31-40....	19,989,171	14,744,834	5,244,337	3,993,364	135·5
'41-50....	23,466,411	18,586,923	4,879,488	4,990,490	126·2
'51-60....	26,073,327	19,607,473	6,465,854	5,341,127	132·9

	Boys in 100 Births.	Males Died to 100 General Deaths.	Girls to 100 Male Births.	Females Died to 100 Male Deaths.
1800-10....	52·8	51·9	89·2	92·3
'11-20....	52·4	51·5	90·8	94·1
'21-30....	52·0	50·8	92·1	96·5
'31-40....	51·3	50·5	94·9	97·9
'41-50....	51·2	50·6	95·2	97·6
'51-60....	51·2	50·9	95·4	96·2

TABLE III.—Financial Balance Sheet of the Redemption Operation on ^{1st}/_{13th} November, 1869.

	Russian Currency.	English Currency.		Russian Currency.	English Currency.
	Roubles.	At 32 <i>d.</i> per Rouble.		Roubles.	At 32 <i>d.</i> per Rouble.
		£			£
To debt of peasants, secured on their lands }	487,174,281	64,956,570	By debt of landed pro- prietors to State Loan Bank	217,989,373	30,398,569
			By payments issued to landed proprietors, viz.:—		
			1. 5 per cent. } bank bills }	55,362,250	
			2. Redemption } certificates } at 5 per } cent..... }	99,372,450	
			3. Rentes at 5½ } per cent. }	102,686,974	
			4. Cash, at 5½ } per cent. }	1,763,334	
				259,185,008	34,558,001
	487,174,281	64,956,570		487,174,281	64,956,570

TABLE IV.—*Present Approximate*

Desiatinas in thousands (approximately).

Provinces.	Total Cultivable Lands.	Town Lands.	Crown Lands in Excess of Peasant Allotments.	Appanage Lands in Excess of Peasant Allotments.	Lands Attached to Mines (Government and Private).
	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>
Archangel	68,951	51·5	60,370	1,572	—
Astrakhan	20,493	35·2	1,334	3	—
Bessarabia	3,296	17·8	39	—	—
Vilna	3,854	12·3	454	—	—
Vitebsk	4,152	25·5	404	—	—
Vladimir	4,333	34·1	256	143	39·5
Vologda	36,251	32·1	27,847	1,117	123·1
Volhynia	6,525	28·5	860	—	—
Voronej	6,101	27·9	151	—	—
Viatka	13,130	26·6	4,139	173	1,834·4
Grodno	3,484	64·1	724	—	—
Ekaterinoslaf	6,205	72·9	50	16	38·8
Kazan	5,708	47·7	1,137	42	3·7
Kaluga	2,884	22·9	80	—	205·2
Kief	4,659	50·6	406	—	—
Kovno	3,711	14·2	377	—	—
Kostroma	7,304	42·3	1,144	476	—
Kursk	4,172	17·2	24	—	—
Minsk	8,177	31·4	820	—	—
Mohilef	4,377	18·6	213	—	—
Moscow	3,072	13·0	39	56	—
Nijni Novgorod	4,653	29·9	521	98	170·6
Novgorod	10,452	47·5	638	799	—
Olonetzk	11,980	40·7	8,547	20	1·164
Orenburg and Ufa	24,549	26·2	207	112	2·232
Orel	4,380	25·9	235	89	11·7
Penza	3,472	21·9	166	—	4·4
Perm	30,872	39·6	8,937	101	10·604
Podolia	3,885	40·3	239	—	—
Poltava	4,550	17·1	20	18	—
Pskof	4,023	24·4	60	—	—
Riazan	3,838	7·3	95	—	—
Samara	14,582	34·9	1,758	768	—
St. Petersburg	4,133	12·7	313	137	—
Saratof	7,495	246·1	29	95	—
Simbirsk	4,451	44·4	17	1,015	—
Smolensk	5,171	22·5	123	—	—
Taurida	5,573	58·7	983	3	—
Tambof	6,058	36·1	524	—	60
Tver	5,834	19·1	191	201	—
Tula	2,812	13·9	44	—	0·6
Kharkof	4,983	25·6	295	—	—
Kherson	6,584	120·7	530	—	—
Chernigof	4,796	42·8	274	—	—
Yaroslaf	3,132	21·2	69	3	—
Total	425,737	1,710	125,787	7,055	16·950

Note.—A desiatina = 2·7 statute acres.

Distribution of Cultivable Lands in Russia.

Desiatinas in thousands (approximately).

Peasants' Lands.			Lands of Nobility or Gentry.	Lands of Other Private Proprietors.	Sundry Proprietors.	
Ex-Crown Peasants.	Ex-Appanage Peasants.	Ex-Serfs.				
<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	No.	
291	117	—	—	—	—	—
2,657	11	17	65	8,315	8,039	Calmuck Tartars
280	—	?	2,275	242	443	Colonists
519	—	793	1,606	449	20	Crown Jews
325	—	877	1,653	113	53	Private and Government
861	170	401	1,805	624	—	—
3,619	274	134	1,479	3,130	—	—
375	—	1,495	2,134	1,606	25	In dispute
3,303	—	349	802	1,467	—	—
7,171	285	43	111	—	—	—
566	—	619	1,279	222	10	Crown Jews
1,735	—	308	2,784	925	136	Colonists
3,438	67	188	787	—	—	—
463	—	378	1,454	281	—	—
421	—	1,294	1,937	488	62	Church
611	—	677	1,785	183	62	Government and private
668	308	467	3,705	495	—	—
1,887	—	349	1,371	522	—	—
242	—	1,450	4,223	2,409	—	—
205	—	1,269	2,301	370	—	—
818	82	335	1,298	431	—	—
848	117	312	2,041	516	—	—
1,346	165	520	3,753	2,836	347	—
777	9	15	399	328	—	—
2,144	162	250	963	17,717	95	—
998	140	406	1,770	700	—	—
1,313	—	450	1,183	334	—	—
4,408	90	211	6,611	—	—	—
379	—	1,131	1,747	315	34	Jews
369	—	329	1,728	1,075	943	Cossacks
739	—	321	2,136	704	38	Government and private
932	—	404	1,660	715	24	Colonists "
4,743	885	229	1,538	4,349	276	Colonists
379	101	294	1,766	1,130	—	—
2,266	182	620	2,682	894	478	Colonists
190	1,065	335	1,409	374	—	—
549	—	685	2,287	1,504	—	—
1,246	—	63	1,124	2,093	152	Colonists
2,260	—	481	1,912	633	—	—
1,228	156	660	2,153	1,226	—	—
394	—	316	1,715	327	—	—
2,236	—	432	1,502	492	—	—
1,243	—	354	3,498	453	386	Colonists
766	0.2	605	1,544	1,464	—	—
562	—	234	1,711	541	7	Government and private
62,667	4,396	21,336	83,530	90,365	11,902	—

Note.—A desiatina = 2.7 statute acres.

TABLE V.—*Value of Various Branches of Manufacturing Industries in Russia, the Number of Manufactories, and of Hands Employed, in 1866.*

Branches of Manufacture.	Number of Manufactories.	Hands Employed.	Value of Manufactured Produce.
			Roubles.
Cotton mills	3,306	147,493	150,618,307
Wine distilleries.....	5,337	60,663	92,967,872
Metallic works	1,732	137,270	71,728,523
Wool factories	1,831	105,135	63,746,294
Sugar „	408	102,034	51,741,838
Tallow and wax factories	2,961	19,493	38,847,714
Tanneries	5,368	24,465	26,396,081
Flour mills, &c.	20,834	77,484	25,214,518
Flax and hemp factories	2,835	47,325	23,872,603
Brandy and wine manufactories	5,050	14,000	15,503,064
Tobacco manufactories	409	28,795	13,810,367
Silk „	518	12,373	7,311,580
Chemical works	1,570	14,513	9,520,750
Wood „	3,849	15,400	9,246,434
Breweries and mead manufactories	3,080	8,928	8,713,913
Paper mills.....	224	11,977	6,919,715
Brick kilns	5,046	31,294	6,491,284
Salt works	146	5,059	6,184,718
Glass „	273	12,214	4,999,197
Others	21,118	46,510	16,902,290
Total	84,944	919,025	650,638,062

HOUSE ACCOMMODATION *for* LEARNED SOCIETIES.

THE scientific bodies associated for the purpose of obtaining sufficient house room for transacting their yearly increasing business, especially the Statistical Society, are indebted to Sir John Lubbock for bringing this subject before the House of Commons.

The House went into Committee of Supply on the 5th August, when, according to the report in the "Times," Sir John Lubbock, on the vote of 12,000*l.* towards the expenditure of certain learned societies—

"Called the attention of the Secretary to the Treasury to the terms in which the vote was described; terms which were calculated to create, and, in fact, had created, an erroneous impression. The vote was described as required 'to pay grants in aid of the expenditure of certain learned societies,' but, in fact, out of the total amount of 12,000*l.*, only a very small proportion really fell under this head. 10,000*l.* were spent on the meteorological department, conducted, it was true, through a committee appointed by the Royal Society at the request of Government; but this really represented an important service rendered by the Society to the Government, and was in no sense a contribution by the Government to the funds of the Society. Another 1,000*l.* was set down as intended 'to enable the Royal Society to carry on certain experiments for public objects.' This also was a misdescription. The fact was that under the old system, when any person applied to Government for assistance in carrying out any inquiry of public interest, the Government were in the habit of consulting the Council of the Royal Society as to the desirability of making such a grant, and in almost all cases acted, he believed, on the advice so given. Some years ago, however, it was suggested that Government should ask Parliament to vote a certain sum for scientific researches, and that the Royal Society should be requested to distribute the sums so voted. This had been done, but the experiments were not carried on by the Society, nor were the funds confined to members of the Royal Society. They were open, not only to all Englishmen, and he might add to all Scotchmen and Irishmen, but also to foreigners; the one principle which guided the committee being an anxious desire to render the fund as useful as possible for the advancement of science. Without troubling the committee with further details, he believed he had shown that 11,000*l.* at least out of the 12,000*l.* were not in any way grants in aid of learned societies. The scientific societies of this country did not rest on the Government, as was the case with similar bodies on the continent. Except that in some cases they were supplied with house room, they provided for every penny of their expenditure by their own subscriptions. He made no complaint of this; the societies preferred their independence, they had

no wish to be subsidised by Government, though he thought the Government might fairly be asked to assist in the publications; but it seemed to them unfair that Parliament should be annually asked to vote a considerable sum for learned societies, when, as he had shown, the money was not really devoted to any such purpose. He hoped, therefore, that next year the vote would be submitted to the House in a different form. He had mentioned that some of the societies were provided by Government with house room, but there were a considerable number which were not so fortunate. Nine of these had constituted a committee, with a view to the erection, if possible, of a suitable building. These were all societies of importance and standing. He need only mention the first on the list, the Statistical Society, whose *Journal* was, no doubt, well known to hon. members, and the value of which would be generally admitted. They applied some time ago to the Government, offering to erect a building at their own expense, if Government would grant them a site on reasonable terms. His right hon. friend the Chancellor of the Exchequer received them with courtesy, and expressed his desire to meet their views if possible; but as they had heard nothing more on the subject, they were anxious to learn whether he had been able to arrange anything in the matter. Before sitting down he wished to say a word on the subject of the annual grant of 1,000*l.* allotted to the prosecution of inquiries of public interest. The Royal Society had never made any application for an increase of this grant, and the Council had not requested him to do so. Speaking, however, merely as an individual deeply impressed with the importance of scientific progress to the welfare of the general community, more especially in a thickly-populated country like ours, where the general well-being and comfort of the people depended so much on an acquaintance with the general physical laws by which the universe was governed, he confessed that to devote 1,000*l.* a-year to such a purpose seemed to him hardly worthy of an enlightened people, and he believed that if the Government next year were to propose an increase in this grant, it would be a most wise expenditure of public money, would receive the support of this House, and would give general satisfaction to the country.

“ Mr. Baxter admitted that his hon. friend’s criticism of the wording of the vote was just, and would take care to correct it before next year. The suggestion, however, as to the propriety of giving house accommodation to the learned societies had taken him quite by surprise, for he had not heard of the matter before. A deputation, he believed, had waited upon the Chancellor of the Exchequer, but he could hold out no hope that the Government would entertain their request.”

The “*Economist*” made the following observations upon the subject:—

“ Sir John Lubbock has very properly called attention to the unsystematic way in which the Government gives encouragement to science and learning, and has hit more than one blot which might

be remedied. It was certainly worth while to expose the delusion of a vote of 12,000*l.* for learned societies, when only a small portion of the money was really devoted to any such purpose. But the fact that there is now a pretence of a vote is no reason why there should not be a real one, and the Government, as Sir John Lubbock also pointed out, has now the opportunity of gracefully doing a good turn to certain scientific societies at little cost to the country. Nine of these societies, with the Statistical Society at the head of them, have constituted themselves into a committee for erecting a building for their accommodation, and they ask the Government for a very small favour indeed. Their great difficulty is that of finding a site in a suitable locality—that is, in the neighbourhood of Westminster or of the various learned institutions located near Regent Street and Piccadilly, and all that they ask is that the Government, having a certain quantity of building land in this neighbourhood, should give them the option of a site on reasonable terms. We certainly think that societies like the Statistical, which do not a little to stimulate scientific inquiry, are entitled to be favourably heard when they ask a favour of this sort—that the Government should rather hasten to use in their favour the power it has of establishing them in a central habitation, and so preventing the loss and waste of time, and the want of a conspicuous position, which are now the consequence of their being scattered about the neighbourhood of Charing Cross. The Government, it should be distinctly understood, is not asked to pay the expenses of learned societies as foreign Governments do; but the concession of the small favour required, while it would cost them little or nothing, would nevertheless be an appreciable encouragement to certain branches of learning; and when the matter comes before Parliament again, we hope the Government representative, whoever he may be, will not, like Mr. Baxter, be ‘taken by surprise.’ ”

MISCELLANEA.

CONTENTS :

	PAGE		PAGE
I.—The Coinage of Gold for Twenty-Four Years.....	376	III.—Emigration from British Ports	385
II.—Crime in London, 1869-71	384	IV.—Work and Wages in Canada	388

I.—*The Coinage of Gold for Twenty-Four Years.*

FROM the *Economist* of the 29th June:—

“ We subjoin a few figures, which we hope will throw some light on the important questions raised by Mr. Thomson Hankey in his letter to us, which appeared in the *Economist* of the 15th inst. They are an account, in a condensed form, derived from official publications, of the actual coinages of gold at the principal mints of the world—those of France, England, the United States, and Sydney—since the date of the gold discoveries. In a discussion on the production of gold and its effect on prices, such figures are the most useful to obtain. Direct estimates of the gold produced can, from the nature of the case, be no more than approximately correct; but the mint reports at least furnish us with definite and trustworthy figures so far as they go, and fortunately they cover a large part of the subject, because it is the additions to the coinage and not merely the gold production, which are most important in the question of prices.

“ The first impression of our table, we think, will be that Mr. Hankey has certainly not exaggerated the additions to the quantity of gold in the world since 1848, or the importance of our now ‘taking stock’ of the subject. The general result of the table is that since 1848 the immense sum of 600,000,000*l.* of gold has been coined at the above mints, in the following proportions:—

	£
England.....	123,608,000
France	259,801,000
The United States	185,579,000
Sydney	28,799,000
Total	<u>597,787,000</u>

“ It is difficult not to believe that so large an addition to the previous amounts of the gold coinage can have been without important consequences, both direct and indirect. Of course, a deduction ought to be made for recoinages—the same gold having sometimes been coined twice over in different countries; but even if the whole coinages of the United States and Australia had been recoined in England and France,—and this is most unlikely,—the sum of 400,000,000*l.*, which would remain, would still be an immense amount. To appreciate the magnitude of the sum, it is only necessary to remember that the current estimate of the gold in the

world in 1848 was 560,000,000*l.* Assuming that estimate to have been approximately correct, we have a coinage in twenty-four years equal to the whole stock of estimated gold existing at the commencement of the period.

“ Before discussing the effect on prices, however, the facts must be scrutinised more narrowly, and other questions considered. In itself, there is no fact more difficult to trace than a general rise or fall in prices, which is clearly due to a change in the supply of gold. A general rise due to such a cause, which would be in effect a fall in the value of gold, is sure to be checked, like a fall in the price of any other raw material, by a stoppage of production at a certain point. A general fall of prices will be checked, on the other hand, by an increase of production. No such checks can occur without considerable fluctuations, and as prices are constantly fluctuating from other causes, the exact bearing of an increased or diminished supply of gold becomes the more difficult to trace. Mr. Jevons, in his very able inquiry, supplied good reasons for believing that at the time he wrote gold had fallen in value compared with other raw materials; but the difficulty with which even this limited conclusion was arrived at by so able an inquirer, is the best proof of the obscurity of the facts. It appears to be possible, however, to make certain assumptions respecting the tendency of the facts, judging from the known effect on prices of similar movements in the supply of other articles; and also to examine the bearing of other economic facts of the last twenty-five years on the effect of the supply of gold.

“ The subjoined figures then appear to us to contain some intrinsic evidence that the effect on prices may not have been so great, or at least is not now so great, as the great addition to the supply of gold in the last twenty-five years would imply. *First*, there has been a quick diminution in the rate of coinage since 1857-59, when the climax of activity, which began in 1851, was obtained. The total coinage in the three years ending 1859, was—

	£	£
1857	41,738,000	
'58	32,700,000	
'59	37,161,000	
	<hr/>	
	111,599,000	
Giving an annual average of....	—	37,200,000

“ And in the three years ending 1871, was—

1869	24,426,000	
'70	8,516,000	
'71	18,052,000	
	<hr/>	
	50,994,000	
Giving an annual average of....	—	16,998,000
		<hr/>
Average annual decrease		20,202,000
		<hr/>

“ In other words, the current rate of coinage has fallen to less than half the maximum rate since the period of the gold discoveries. That the change has been very steady, is shown by a glance at the annual totals in Table II, and a summary for the quinquennial periods shows it just as clearly :—

Total Coinage in Quinquennial Periods.

	Total.	Annual Average of Period.
	£	£
4 years (1848-51)	48,880,000	12,220,000
5 „ ('52-56)	160,126,000	32,025,000
5 „ ('57-61)	168,980,000	33,396,000
5 „ ('62-66)	127,611,000	25,522,000
5 „ ('67-71)	92,190,000	18,438,000
	597,787,000	24,908,000

“ Thus from a maximum average of 33,000,000*l.* in the five years 1857-61, the rate fell to 25,000,000*l.* in the following five years 1862-66, and to 18,000,000*l.* in the last five years 1867-71—the latter average being also considerably under the average for the whole period. The fact, according to the usual rule of the effect of supply on prices, has only one interpretation. The previous supply of gold tending to diminish its value, there has ensued a check to production which would tend to counteract that effect. This would be the general argument from such statistics. More information would be needed before the effects could be measured with any accuracy, but the tendency of the fact by itself is clear.

“ The *second* fact shown by the above figures is the enormous absorption of coin by a single country—France—indicating, we should infer, that there was in operation a very special new demand, and, in consequence, that a large part of the new supplies of gold was not thrown in to compete with the old stock. France coined, in round numbers, between 1848 and 1869, the large sum of 260,000,000*l.*, more than twice the amount coined in England in the same period, although we have so much more trade, and virtually coin for Brazil, Portugal, Egypt, and other countries, as well as for ourselves. Nearly half the new coinage has in fact been for France, which has thus by itself absorbed a large part of the new gold. Of course it may have been enabled to do this because of the gold falling in value, but the absorption followed so quickly on the events of 1848, that it would operate in time to check a very extensive fall. It was in the first years that France coined most—

French Coinage.

	Total.	Annual Average.
	£	£
4 years (1848-51)	16,880,000	4,220,000
5 „ ('52-56)	71,471,000	14,294,000
5 „ ('57-61)	91,525,000	18,305,000
5 „ ('62-66)	49,011,000	9,802,000
5 „ ('67-71)	30,914,000	6,163,000
	259,801,000	10,825,000

“ No doubt the low average of the last five years is partly caused by the cessation of coinage operations, which we assume to have taken place in 1870 and 1871

because of the war and the issue of inconvertible paper ; but even if an amount equal to the addition to the paper circulation had been coined, the average for the five years would still have been much under the average of the period from 1852 to 1861. Thus the new demand of France was most effective when gold was coming forward in greatest abundance, and of course would tend, at the most critical period, to check the effect on prices of the new supplies.

“ There is thus some reason to conclude, from the intrinsic evidence of the figures, that in the actual circumstances of the world there must have been a good deal to counteract the fall in the value of gold, which we should look for as the effect of a largely increased supply. The assumption as to the effect of supply on prices is always made on the condition of other things being equal ; but in the case of gold, other things have not been equal. If we inquire further, we shall find that, besides the new demand for France, which is exhibited in the figures themselves, there have been numerous causes at work since 1848, partly aggravating and partly neutralising the effect of an increased supply of gold.

“ The neutralising circumstances can be very easily stated. They are principally the great increase of population and wealth which has occurred in the countries making use of a gold coinage since 1848. Omitting France, which is the case of a country *substituting* gold for silver, we find that altogether the coinage since 1848 has been 338,000,000*l.*, which, without any deduction for recoinage, is equal to an increase of 60 per cent. upon the supposed previously existing stock of 560,000,000*l.* But the increase of population in the countries concerned has been about as great, and in wealth has been much greater—

Increase of Population in Principal Countries using Gold Coinage since 1848.

	1848.	1871.	Increase.	
			Amount.	Per Cent.
United Kingdom	28,000,000	32,000,000	4,000,000	14'3
„ States	22,000,000	39,000,000	17,000,000	77'3
Australian colonies	500,000	2,000,000	1,500,000	300'0
	50,500,000	73,000,000	22,500,000	44'5

“ The people who use the gold have thus multiplied largely, so that if we are to assume the effect of the supply of gold on prices to be proportioned to the population, the great coinage since 1848 has clearly been called for by an increase of population.

“ As regards the increase of wealth, the figures are even more remarkable. The increase of population has been at the smallest rate in the United Kingdom, but its trade and profits have expanded enormously—

		£
The property assessed to income tax is now	435,000,000	
„ in 1848 was	256,000,000	
Increase	179,000,000	

equal to an increase of 70 per cent.

“ It may be said that this increase of annual value is an artificial one, caused by the fall in value of the measure in which it is reckoned, but a detailed examination would show that it is largely due to the creation of new properties—railways, mines, houses, and the like—the *old* properties having risen very little, although much new capital must have been sunk in them.

“ The statistics as to trade are equally remarkable. Omitting altogether the estimates of value, we note the following changes of quantity :—

Exports.

	1848.	1870.	Increase.	
			Amount.	Per Cent.
Cotton piece goods....yards	1,096,751,000	2,301,064,000	1,204,313,000	110°0
„ yarn lbs.	135,831,000	186,387,000	50,556,000	37°0
Linen yarn..... „	11,722,000	37,122,000	25,406,000	217°1
„ piece goods....yards	89,002,000	226,457,000	137,455,000	153°9
Iron and steel tons	626,000	2,716,000	2,090,000	333°9
Woollen yarn lbs.	8,429,000	36,582,000	28,153,000	335°2
„ cloth, &c. yards	10,194,000	32,540,000	22,346,000	220°0
Flannels, &c. „	6,053,000	15,001,000	8,948,000	149°0
Worsted stuffs, &c. „	67,437,000	236,062,000	168,525,000	235°9

“ Thus our production of these articles has enormously increased during the last twenty-four years—at a much greater rate than the increase of 60 per cent. in the measure of value.

“ And this increase is not confined to the foreign trade alone. Since 1856 only the production of coal and iron has increased as follows :—

	1856.	1869.	Increase.	
			Amount.	Per Cent.
	Tons.	Tons.	Tons.	
Coal	66,645,000	107,428,000	40,783,000	60°6
Iron	3,586,000	5,446,000	1,860,000	53°2

—and the imports of the raw material of manufacture retained for home consumption have also increased in a similar manner.

		lbs.
The raw cotton imported for home consumption in 1870 was		1,101,675,000
„ „ „	’48 „	639,000,000
Increase		462,675,000

equal to an increase of 72·3 per cent.

	lbs.
The wool imported for home consumption in 1870 was.....	170,708,000
" ,, '48 ,,	64,289,000
	<hr/>
Increase	106,419,000

equal to an increase of 167 per cent.

“ The conclusion to be drawn from the increase of our foreign trade is thus supported by the leading facts respecting our home industry. Our production and business have doubled or more than doubled in the last twenty-four years.

“ In these ways then a very large supply of new gold may have been absorbed in the last twenty-four years without prices being affected. Although the supply has increased, the communities making use of it have also increased both in numbers and in productive energy. Were these the only facts, our wonder should rather be that gold has not rather risen in value, as the increase of the production of other commodities is so much greater. But the circumstances which would aggravate the effect of an increased supply of gold have also been very powerful. Most prominent among these is the multiplication of expedients for economising the use of money in the gold-using countries. The spread of banking in England, and the development of the use of cheques, have checked a demand for gold which might otherwise have sprung up. The London joint stock banks especially have been admitted to the clearing since 1848, and branch banks have been greatly multiplied in the country. The effect of this economy is very difficult to measure, but its direct tendency is unmistakable, and must have been very powerful in England.

“ A second set of measures, tending in the same direction, has been the introduction of inconvertible currencies into America and France. By this operation a substitute has been provided for gold in the countries which would otherwise have used it. But the effect, as regards France at least, has been very little. The paper circulation has increased about 30,000,000*l.*, very little more than what had lately been the ordinary annual coinage of two years. The paper, therefore, has taken the place of the old coinage only to a very small extent, the notes being made for circulation and the coin for hoarding. As regards America, the circumstances are different, the inconvertible paper having been afloat for ten years, and having long stood at so great a depreciation as to displace the gold. But the inconvertible paper has, after all, been limited, and in consequence of the local action in California, where the currency of paper has been forbidden by custom, and of the necessity for paying customs duties in gold, there has always been a customary gold currency side by side with the legal paper currency. The figures we subjoin certainly show that, notwithstanding the paper currency, there has been a steady demand for gold coin during the last ten years—the coinage having fallen off since 1862 just as it has fallen off in England and France, but not to any greater extent. The tendency of inconvertible paper must undoubtedly be to reduce the demand for gold, but in the actual conditions of the issues since 1848, the practical effect has apparently been less than theory would lead us to expect.

“ We conclude, therefore, that while the effect of the new supply of gold, as shown in the enormous coinage since 1848, would naturally be a great reduction in its value, there is at least some evidence for holding that this natural effect has been largely checked or counterbalanced by other circumstances. France has caused a large new demand by substituting gold for silver, and the great gold-using communities have increased enormously in population and industry. Expedients for

economising money have, on the other hand, increased as well, and issues of inconvertible paper in France and America tend to increase the abundance of gold. But these causes are difficult to measure, and have as yet been partial in their effects. It is curious that, as regards the future, the influence of increasing population and increasing commodities will apparently operate as powerfully as hitherto in checking the effect of an over-abundant supply. The issue of inconvertible paper by France is being balanced by the adoption of a gold currency in Germany, and the approximation in the value of paper to gold in America, coupled with the limitation of paper, will tend to increase the demand for coin there. We must reserve these points, however, for a future article, in which we propose to inquire more minutely into the whole question of the production and distribution of gold since 1848.

“ The following tables contain a statement of the annual coinage of gold at the Mints of England, France, and the United States, and the Sydney Mint since 1848. The first table, embracing the period between 1848 and 1856 inclusive, is extracted from vol. v of Tooke and Newmarch's *History of Prices*; and the second table, which has been drawn up in the same form and embraces the subsequent period from 1856 to 1871, has been compiled for the foregoing article from official sources of information in the respective countries. The figures relating to the English coinage have been taken from the Mint returns; those relating to the French coinage from the annual statement contained in the *Compte General* of the French Minister of Finance; those relating to the United States' coinage, from the reports of the Director of the Mint; and those relating to the Sydney coinage from an Appendix to the last English Mint Report.

1.—*Coinage of Gold, Nine Years, 1848-56, at the Mints of Great Britain, France, and the United States.*

(Extracted from Tooke and Newmarch's *History of Prices*, vol. v, p. 154).

[000's omitted.]

1	2	3	4	5
Total Coinage.	Years.	England.	France.	United States.
£		£	£	£
4,807,	1848.....	2,452,	1,600,	755,
5,058,	'49.....	2,178,	1,080,	1,800,
12,492,	'50.....	1,492,	4,600,	6,400,
26,523,	'51.....	4,400,	9,600,	12,523,
48,880,	(1848-51)	10,522,	16,880,	21,478,
21,152,	1852.....	8,742,	1,040,	11,370,
36,195,	'53.....	11,952,	13,200,	11,043,
35,052,	'54.....	4,152,	20,480,	10,420,
33,658,	'55.....	9,008,	16,417,	8,233,
32,336,	'56.....	6,002,	20,334,	6,000,
158,393,	(1852-56)	39,856,	71,471,	46,066,
207,273,	General totals	50,378,	88,351,	68,544,

2.—*Coinage of Gold at the Mints of England, France, the United States, and Sydney, since 1856.*

(Compiled from original materials).

[000's omitted.]

1	2	3	4	5	6
Total Coinage.	Years.	English.	French.	The United States.	Sydney.
£		£	£	£	£
41,738,	1857	4,860,	22,902,	13,209,*	767,
32,700,	'58	1,231,	19,548,	10,578,	1,343,
37,161,	'59	2,650,	27,208,†	6,082,	1,221,
27,400,	'60	3,121,	17,938,	4,689,	1,652,
29,981,	'61	8,191,	3,929,	16,142,	1,719,
168,980,	(1857-61)	20,053,	91,525,	50,700,	6,702,
31,219,	1862	7,836,	8,570,	12,335,	2,478,
21,081,	'63	6,608,	8,409,	4,529,	1,535,
27,984,	'64	9,535,	10,954,	4,796,	2,699,
17,251,	'65	2,367,	6,475,	6,137,	2,272,
30,076,	'66	5,076,	14,603,	7,486,	2,911,
127,611,	(1862-66)	31,422,	49,011,	35,283,	11,895,
18,793,	1867	497,	7,943,	7,952,	2,401,
22,403,	'68	1,653,	13,603,	4,828,	2,319,
24,426,	'69	7,372,	9,368,	6,407,	1,279,
8,516,	'70	2,313,	‡	4,983,	1,220,
18,052,	'71	9,920,	‡	6,882,	1,250,§
92,190,	(1867-71)	21,755,	30,914,	31,052,	8,469,
388,781,	{ Add for nine years ending 1856..... }	73,230,	171,450,	117,035,	27,066,
209,006,		50,378,	88,357,	68,544,	1,733,
597,787,	{ Grand total, 1848 to 1871 }	123,608,	259,801,	185,579,	28,799,

* We regret that we have not the exact figure for this year before us, but we do not believe there is any error in what we have put down. The total coinage of the decade ending 1857 was nearly 82,000,000*l.*, and the coinage of the previous nine years was 68,500,000*l.*

† The gross amount coined was 28,105,000*l.*, but nearly a million was recoinage. The figure here given is the net amount.

‡ Interrupted by war of 1870-71 and issue of inconvertible paper.

§ Estimate only.

II.—*Crime in London, 1869-71.*

FROM the *Pall Mall Gazette*:—

“What are we to take as the best measure of the criminality of one place or of one period compared with another? In English criminal statistics the graver transgressions are classed and treated as indictable offences, and the delinquents are tried by a jury. Lighter and far more numerous misdeeds are treated summarily by the magistrate. Returns with respect to both classes of offenders within the London police districts for the three years ending 1871, have been recently published as a Parliamentary Paper. The districts are two, embracing the area of the Metropolitan police and of the City of London police. At the last census the population of these districts was 3,880,000. If we accept the comparative number of indictable offences as the sole exponent of London crime known to the police, we can assert that there has been a marked diminution in the course of two years. These are some of the data, taken from Mr. Henley's return:—

Number of Persons Committed or Bailed for Trial within the Jurisdiction of the London Police Districts during Three Years.

	Number of Offenders.			Number thereof Acquitted.
	Males.	Females.	Total.	
1869	3,572	895	4,467	985
'70	3,231	858	4,086	954
'71	2,904	910	3,814	953

“In the total column the decrease of offenders is marked: the figure for 1870 was less than for 1869 by 380, and 1871 fell short of 1870 by 270. Comparing 1870 with 1869, the decrease was $14\frac{1}{2}$ per cent. It is worthy of note that this diminution was mainly due to a falling off from the ranks of the male offenders; the female offenders, in fact, during the last year having increased.

“Turning to the summary convictions as our guide, we may surely pronounce that there has been a large increase of crime.

Number of Persons Summarily Convicted within the Jurisdiction of the London Police Districts during Three Years.

	Offenders Summarily Convicted.			Number thereof Fined.
	Males.	Females.	Total.	
1869	51,230	15,048	66,278	43,819
'70	52,349	14,488	66,837	44,996
'71	53,579	16,885	70,464	49,655

“Here the moderate increase of 560 in 1870 is followed in 1871 by a large increase of 3,630. The year 1871 was worse than 1869 by 6 per cent. If the

two classes of offenders are combined, we find the figures still point to the bad; thus the aggregates taken in sequence are 70,745, 70,923, and 74,278. The paper does not give any description of the crimes and offences. Our tables, apparently antagonistic, are, we submit, reconcilable. Last year the labouring population of the metropolis was more fully employed than in 1870 or in 1869. In prosperous times serious crime diminishes, but the lighter offences increase, because a dominant portion of the latter arise specifically from hard drinking, in which the lower orders more freely indulge when wages are good. These offences come under the terms ‘drunkenness,’ ‘drunk and disorderly,’ and ‘common assaults.’ In London these usually form more than one-third of the cases determined summarily. It will be seen that five-sevenths of the offenders last year expiated their misdeeds by fines. Though during 1869, 1870, and 1871 upwards of 200,000 persons were summarily convicted by the London magistrates, only 17 of that vast herd were whipped.”

III.—*Emigration from British Ports.*

THIS article appeared in the *Times*, 27th June :—

“ Could matters be estimated at their real value, nothing that has come before Parliament or the British public this year would be found to surpass the importance of a very handy little blue book, entitled the *Thirty-Second General Report of the Emigration Commissioners*. It tells us how the inhabitants of these isles are increasing and multiplying, how they are replenishing the earth, how they are doing this quietly, safely, and at the cost of those benefited by the process, how a progeny of new States all over the world is fast growing to maturity, and what a choice of opportunities is afforded to those who have the spirit to embrace them. A quarter of a million annually leave our ports for fertile regions, enjoyable climates, and institutions scarcely less settled than our own. Whatever a man can reasonably desire, and even if he should have some wishes beyond the limits of a just expectation, he can seek to realise them with much more prospect of success in a score or more colonies, dependencies, and States once British plantations, now independent and something more. Take all the objects supposed to be nearest and dearest to the heart of an Englishman, Irishman, or Scotchman, and, at the cost of a few pounds and a pleasant voyage in a fast and well-appointed steamer, it is easy to obtain any one of them, or all of them. Wages dictated by the workman to the employer, say 10s. a-day; land for next to nothing; gardens, pigs and cows *ad libitum*; no game laws, the ballot, and the pleasure of being governed by your own workmen and servants should you chance to have any—all this is now within an Englishman’s reach. The only difficulty is to choose where everything is so good. The greater part of our fellow subjects settle this embarrassing question by taking themselves off to the United States. The commissioners confess a lingering sentiment in favour of our own colonies, and they extenuate the ill-look of the choice by noticing that the United States’ agencies are much more active than the colonial. They are, indeed, everywhere at work, pointing out the advantages of emigration, and smoothing the way. The commissioners themselves, however, do their duty manfully by enforcing the provisions of the Emigration Acts, and so securing that

the passage shall be safe and comfortable. Notwithstanding the perils of the deep, and the very severe weather to which emigrant ships must be exposed at some seasons of the year, the average mortality of the British emigrant on board ship is considerably less than that of the population at home, even in the healthiest portions of these islands. Thus do we seem to stand on our own shores at once welcoming the visitor and speeding the voluntary exile. 'Do just what you please,' England seems to say. 'Come here, if you like; stay if you like, and go if you like. We will not interfere with your taste. We will even help you to consult it. Please yourself, and we are pleased.'

"In the course of last year no less than 252,435 persons went as emigrants from British ports. The sum total is a little less than those of the two preceding years, but when we come to the nationalities, it becomes evident that emigration is a fact of growing importance. The English emigrants in 1871 were 102,452, near twice the number only four years ago. The Scotch were 19,232, also an increase on the average of eight years. In the same period of eight years Irish emigration has fallen from 115,428 to 71,067. The foreign emigration passing through this country has risen in eight years from 16,942 to 53,246. It is to be admitted that the Irish emigrants still bear a much larger proportion to the population of Ireland than the English to the population of England, for this island has yet to see such an outpouring of people as that caused by the Irish famine. But it is remarkable that eight years ago the Irish emigration was numerically twice as great as the English, and last year the English was nearly half as large again as the Irish. It cannot be accident, or impulse, or political feeling that now sends away every year more than a hundred thousand persons of English birth. They go on sober speculation, on well-assured grounds, to the friends who have invited them, and to promised employments. If we take as an example the colony most natural and convenient, for six guineas a loyal British subject can get from his nearest English port to Toronto in fourteen or seventeen days; the voyage to Montreal or Quebec being done by steamer, and the onward journey by railway. Transatlantic emigration is now done almost entirely in steamers, so vain are the predictions of those who said steam would never pay for that voyage. The great size of these vessels gives the emigrant ample space, his choice of company, and comparative freedom from sea-sickness. He has a much pleasanter time of it than the poor lady who is obliged to accompany her husband in a month's yachting about our own shores. It is not easy to ascertain how many pass through Canada into the States, or through the States into Canada, but it is stated by the commissioners, no doubt on good grounds, that Canada cannot easily and advantageously receive more than 40,000 immigrants year by year, whereas the demands of the United States are without limit. They are now receiving from Europe every year a greater number than they lost, by the largest estimate, on both sides in the whole civil war. It is Europe that repairs the awful waste of life, and is doing it, so to speak, with cent. per cent. interest. That tide will still flow with increasing volume. It is moved not only by home poverty and difficulties, and by a sense of these quickened by political feelings, but by an enormous amount of family connection. Not far from a million of money passes through the banks and emigration offices every year, sent from the United States to bring over brothers, families, and friends. Something, too, comes from Canada, and to England, for the same purpose, though a trifle in comparison. The great stream is to the United States, and from England alone it now exceeds a hundred thousand a-year. That is less than a fifth of our natural increase, whereas Scotland sends off in emigration a third, and Ireland about half. The way in

which the United States are affected by these changes in the nationality of their new arrivals, particularly the very large increase of the German and Scandinavian element, is a matter for distinct consideration; but, upon the whole, it would seem as if the Celt had had his day in American politics, without the consolation of having made a good use of it.

“ But, whatever we may wish as to Canada, and whatever may be the fact as to the United States, we may still remind those about to take wing of the great British empire under our feet. It is only just a little more effort, a trifle more cost, and two or three months instead of two or three weeks, and the British labourer or artisan will find himself in the very world of his fancy. He will find an England or an Ireland as it should be without waiting for a tedious succession of difficult reforms, and without having to fight for it. Take Melbourne for example. Forty-five years ago the sole occupants of that soil were a few savages, kangaroos, and prairie dogs, and now there is a beautiful city with 200,000 inhabitants, many handsome public buildings, beautiful suburbs, and a prosperous port and harbour and roadsteads full of shipping from all parts of the world. The population of the colony, including 17,813 Chinese and 859 Aborigines, is 710,982; while the disproportion of sexes among the Europeans is fast diminishing, there being 329,016 women to 381,966 men. A single sentence of the report before us will do duty for columns of statistics:—‘ The wages of artisans are, in Melbourne, and generally throughout the colony, 10s. a-day; of agricultural labourers, 15s. to 20s. a-week, with rations; of shepherds and stock-keepers, 35*l.* to 40*l.* and 40*l.* to 50*l.* per annum, with rations. Married couples without families are paid 65*l.* to 80*l.*; with families, 40*l.* to 55*l.* per annum, with board and lodging. Female domestic servants get from 20*l.* to 45*l.*, according to capacity. General labourers obtain 6s. a-day without rations.’ When such is the value of labour, we need not be surprised to find there is not quite so much land hunger as our labourers at home would expect. ‘ The extent of land sold in 1870 was 337,506 acres; the price realised, 463,820*l.*’ As there are still in that colony alone nearly 50,000,000 acres of land waiting purchasers, it cannot be for want of land that only the third of one million was sold in one year, nor could its price be any obstacle, as it is evident, on a comparison of the figures above, that any agricultural labourer or artisan could save enough in three or four years to buy a nice little estate. The truth is that the great majority of the working people there find their labour more valuable and marketable than land, and have no wish to change places with farmers and landowners. The Chinese, who are a sensible race after their own fashion, work hard for three or five years, save a hundred pounds, and return to their own country, much to the disgust of the thriftless Anglo-Saxon, who would rather see them spend it all, and return to China as poor as they left it. Such is the picture of an Englishman’s just hopes and expectations, as drawn, not with the pencil of imagination by orators and internationalists, but by a Department of the State, collecting and arranging dry returns, presenting facts and figures, and leaving people to draw their own inferences. The inference we draw is that it is at least more sensible to go where all this can be got at once, and where one will be welcome, than to try to turn things topsy-turvy here on the mere chance that something better will come out of it.”

IV.—*Work and Wages in Canada.*

FROM the *Pall Mall Gazette*, 8th August :—

“ A ‘ confidential ’ report by the Minister of Agriculture in Canada, which has just been printed, gives some useful information respecting emigration to that colony. It seems that the classes of labourers whose labour is most in demand in Canada are the agricultural; but there is also a very large demand for the classes of common able-bodied labourers for employment on public works. The handicrafts and trades generally which are, so to speak, of universal application, can always absorb a large number of artisans and journeymen. There is everywhere a large demand for female domestics of good character. Children of either sex, respectably vouched for and watched over upon their arrival by those who bring them out, may be absorbed in very considerable numbers. The fisheries of the Dominion are almost of unlimited extent, and these, too, afford a field for the particular kind of labour adapted to them. Professional or literary men and clerks and shopmen should not be induced to emigrate to Canada, unless upon the recommendation of private friends. The numbers of immigrants which might be absorbed by the immense agricultural and other resources of the Dominion, are practically unlimited. It is a fact that more than treble the number of the ordinary yearly arrivals of immigrants could be absorbed without making any glut in the labour market. The average wages paid to agricultural and other labourers are from 24*l.* to 30*l.* a-year with board, and from 50*l.* to 60*l.* a-year without board. Skilled farm hands get from 30*l.* to 40*l.* a-year with board. Common labourers get from 5*s.* to 6*s.* 3*d.* per day. Mechanics and skilled artisans from 6*s.* to 16*s.* a-day, the wages varying according to circumstances. The wages of female servants vary from 16*s.* to 2*l.* a-month with board, but higher rates are paid according to capacity or demand. Very common rates are from 1*l.* 4*s.* to 1*l.* 12*s.* per month. Boys in situations get from 16*s.* to 2*l.* a-month with board, according to age and capacity. The following list of average prices will, it is to be feared, cause much discontent in many English households:—4-lb. loaf of white bread, 5*d.* to 6*d.*; salt butter, 5½*d.* to 6*d.* per lb.; cheese, 4½*d.* to 7½*d.* per lb.; potatoes, 1*s.* to 2*s.* per bushel; sugar (brown, but dry and superior quality), 4½*d.* to 5*d.* per lb.; tea, 2*s.* to 2*s.* 6*d.* per lb.; eggs, 6*d.* to 9*d.* per dozen; milk, per quart, 2½*d.* to 3*d.*; beer, 2*d.* to 5*d.* per quart; tobacco, 1*s.* to 2*s.* per lb.; and other articles in proportion. The average price of meat is 3½*d.*, 5*d.* to 6*d.* per lb., and it must be remembered that the purchasing power of the dollar in Canada is much greater than in other parts of America, especially in those things which make the cost of living. This fact should always be kept in mind in making comparisons between the rate of wages paid in Canada and the United States. Canada has also one very convenient peculiarity. Large families are a blessing rather than a misfortune in the case of those who ought to be induced to emigrate. ‘ A family,’ says the report, ‘ in this country, brought up to habits of industry, is a very great source of strength rather than of weakness and of burthen.’ It is almost incredible that parents can look upon a large family circle and feel inclined to laugh, yet such actually appears to be the case in Canada.”

REGISTRATION OF THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED MARCH, 1872.

BIRTHS AND DEATHS—QUARTER ENDED JUNE, 1872.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1872-66, and in the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—Numbers.

Years.....	'72.	'71.	'70.	'69.	'68.	'67.	'66.
Marriages No.	—	190,015	181,655	176,970	176,962	179,154	187,776
Births..... „	—	797,143	792,787	773,381	786,858	768,349	753,870
Deaths „	—	515,096	515,329	494,828	480,622	471,073	500,689

QUARTERS of each Calendar Year, 1872-66.

(I.) MARRIAGES:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	40,557	36,229	36,455	37,752	36,696	36,441	37,579
June „	—	48,652	46,720	43,202	45,364	45,589	48,577
September „	—	46,636	43,900	43,978	43,509	44,086	46,257
December „	—	58,498	54,580	52,038	51,393	53,038	55,363

(II.) BIRTHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	208,737	209,787	206,366	203,775	198,584	194,763	196,753
June „	208,711	200,877	203,615	188,618	202,839	199,660	192,437
September „	—	192,986	192,521	190,394	192,583	190,782	179,086
December „	—	193,493	190,285	190,594	192,852	183,144	185,594

(III.) DEATHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	134,992	138,603	143,773	133,096	119,676	134,008	138,136
June „	120,914	120,870	121,128	118,947	110,010	112,355	128,551
September „	—	121,236	124,297	114,644	130,482	108,513	116,650
December „	—	134,387	126,131	128,141	120,454	116,197	117,352

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS
LIVING in the Years 1872-66, and the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—General Ratios.

YEARS.....	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
Estmtd. Popln. of England in thousands in middle of each Year....	23,075,	—	22,760,	22,457,	22,165,	21,882,	21,608,	21,343,
Persons Mar- ried	—	16·7	16·7	16·2	16·0	16·2	16·6	17·6
<i>Births</i>	—	35·3	35·0	35·3	34·9	36·0	35·6	35·3
<i>Deaths</i>	—	22·7	22·6	23·0	22·3	22·0	21·8	23·5

QUARTERS of each Calendar Year, 1872-66.

(I.) PERSONS MARRIED:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	14·1	13·8	12·9	13·2	13·8	13·5	13·7	14·3
June.....	—	16·9	17·1	16·7	15·6	16·6	16·9	18·3
September	—	16·3	16·3	15·5	15·7	15·8	16·2	17·2
December	—	19·8	20·4	19·2	18·6	18·6	19·5	20·6

(II.) BIRTHS:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	36·3	37·0	37·4	37·3	37·3	36·4	36·6	37·4
June.....	36·3	36·3	35·4	36·4	34·1	37·2	37·1	36·2
September	—	34·1	33·6	34·0	34·1	34·9	35·0	33·3
December	—	34·0	33·7	33·6	34·1	35·0	33·6	34·5

(III.) DEATHS:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	23·5	25·2	24·7	26·0	24·4	21·9	25·2	26·2
June.....	21·0	21·8	21·3	21·6	21·5	20·2	20·9	24·2
September	—	21·1	21·1	22·0	20·5	23·7	19·9	21·7
December	—	22·4	23·4	22·3	22·9	21·8	21·3	21·8

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended June, 1872.

1	2	3	4	5		6	7	8		9	10
Quarters ending	Average Price of Consols (for Money).	Average Rate of Bank of England in Dis- count.	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.		
				Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.				
								In-door.		Out-door.	
1870	£		<i>s. d.</i>	<i>d. d. d.</i>	<i>d. d. d.</i>	<i>s. s. s.</i>				°	
June 30	94	3·0	44 8	4½—6¾ 5⅝	5¼—7½ 6⅜	115—135 125	144,226	825,337	54·4		
Sept. 30	91⅝	3·9	50 4	4¾—7¼ 6	5¼—8 6⅝	100—140 120	138,444	787,976	60·7		
Dec. 31	92⅝	2·5	50 1	5—7¾ 6⅜	5¼—8 6⅝	50—90 70	150,729	802,291	41·6		
1871											
Mar. 31	92⅛	2·7	53 7	5—7¾ 6⅜	5¼—7¾ 6½	75—100 87	160,984	878,892	40·2		
June 30	93⅝	2·5	59 9	5¼—7¾ 6½	5½—8½ 7	51—76 63	140,338	805,519	51·5		
Sept. 30	93⅝	2·2	57 9	5½—8 6¾	5¾—9 7½	60—77 68	132,065	769,482	61·3		
Dec. 31	93	4·2	56 3	5—7¾ 6½	5½—8¼ 6¾	75—104 89	140,955	758,474	41·8		
1872											
Mar. 31	92⅔	3·0	55 4	5—7¼ 6⅛	5¾—8½ 7⅛	80—120 100	149,599	776,793	43·6		
June 30	92⅞	4·0	56 8	5¼—7½ 6⅜	6—8¾ 7⅜	124—150 137	134,412	724,463	52·8		

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	1871. Quarters ending				1872. Quarters ending	
		March.	June.	Sept.	Dec.	March.	June.
England and Wales	22·4	24·7	21·3	21·1	23·4	23·5	21·0
I. London	24·3	27·2	23·1	22·9	25·8	24·0	20·7
II. South-Eastern counties ...	19·1	21·1	18·6	17·8	17·6	19·2	17·0
III. South Midland „ ...	20·2	23·3	19·4	18·7	19·9	20·8	18·4
IV. Eastern counties	20·1	21·3	19·1	20·1	20·8	21·1	17·8
V. South-Western counties ...	19·9	23·1	18·7	17·0	21·1	21·4	19·1
VI. West Midland „ ...	21·8	24·1	19·8	19·3	23·4	22·9	21·1
VII. North Midland „ ...	20·8	23·1	19·0	19·5	21·3	21·9	21·3
VIII. North-Western „ ...	26·3	29·5	24·6	25·0	27·9	26·6	23·8
IX. Yorkshire	24·0	24·2	22·0	22·8	24·5	25·5	23·7
X. Northern counties	22·7	24·1	24·9	27·6	27·8	27·3	23·3
XI. Monmouthshire and Wales	21·6	23·6	21·1	17·9	21·7	23·9	21·9

Note.—The rates of mortality in this table have been calculated on populations based upon the recently enumerated numbers, and will not therefore correspond with those published in previous returns.

D.—Special Average Death-Rate Table:—ANNUAL RATE of MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1872-70.

	Area in Statute Acres.	Population Enumerated. 1871.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1872.	Mean '62-71.	1871.	1870.
In 131 Districts, and 58 Sub-districts, comprising the Chief Towns.....	3,287,151	12,900,297	March..	25.4	27.4	26.8	27.5
			June ...	22.6	23.4	23.0	22.7
			Sept.	—	23.8	24.0	24.6
			Dec.	—	25.1	26.4	24.6
			Year	—	25.0	25.0	24.9
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly Small Towns and Country Parishes	34,037,732	9,803,811	Year	—	19.7	19.5	20.4
			March..	20.9	22.6	21.9	23.8
			June ...	18.9	19.8	19.1	20.1
			Sept.	—	17.5	17.4	18.4
			Dec.	—	18.8	19.5	19.2

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365.25 days, and 366 and 365.25 days in leap year.

E.—Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the Second Quarter of 1872, in TWENTY-ONE Large Towns.

Cities, &c.	Estimated Population in the Middle of the Year 1872.	Births in 13 Weeks ending 29th June, 1872.	Deaths in 13 Weeks ending 29th June, 1872.	Annual Rate to 1,000 Living during the 13 Weeks ending 29th June.		Mean Temperature in 13 Weeks ending 29th June, 1872.	Rainfall in Inches in 13 Weeks ending 29th June, 1872.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,393,052	68,316	43,463	37.1	23.6	50.6	8.89
London	3,311,298	29,141	17,096	35.3	20.7	52.7	5.86
Portsmouth.....	115,455	964	699	33.5	24.3	50.7	5.93
Norwich	81,105	675	448	33.4	22.2	50.9	6.71
Bristol.....	186,428	1,640	1,033	35.3	22.2	—	—
Wolverhampton.....	69,268	716	386	41.5	22.4	49.8	11.63
Birmingham	350,164	3,572	1,776	40.9	20.4	50.4	—
Leicester.....	99,143	1,032	686	41.8	27.8	51.1	9.53
Nottingham	88,225	789	494	35.9	22.5	51.5	7.56
Liverpool.....	499,897	4,931	3,212	39.6	25.8	50.1	8.19
Manchester.....	352,759	3,709	2,390	42.2	27.2	—	—
Salford.....	127,923	1,414	787	44.4	24.7	49.3	11.12
Oldham	84,004	790	508	37.7	24.3	—	—
Bradford	151,720	1,639	1,049	43.4	27.8	51.7	10.50
Leeds	266,564	2,848	1,717	42.9	25.9	50.8	9.99
Sheffield	247,847	2,488	1,497	40.3	24.2	50.1	10.19
Hull.....	124,976	1,262	695	40.5	22.3	50.1	6.14
Sunderland	100,665	1,100	593	43.9	23.6	—	—
Newcastle-on-Tyne	130,764	1,279	786	39.3	24.1	—	—
Edinburgh	205,146	1,803	1,529	35.3	29.9	48.6	—
Glasgow	489,136	4,222	3,577	34.6	29.4	—	—
Dublin.....	310,565	2,302	2,505	29.8	32.4	51.0	9.33

F.—*Divisional Table*:—MARRIAGES Registered in Quarters ended 31st March, 1872-70; and BIRTHS and DEATHS in Quarters ended 30th June, 1872-70.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 5 6 MARRIAGES in Quarters ended 31st March.		
			1872.	1871.	1870.
			No.	No.	No.
ENGLD. & WALES....Totals	37,324,883	22,704,108	40,557	36,229	36,506
I. London	77,997	3,251,804	6,661	5,957	5,967
II. South-Eastern	4,065,935	2,166,217	2,915	2,670	2,745
III. South Midland	3,201,290	1,442,567	1,738	1,595	1,576
IV. Eastern	3,214,099	1,218,257	1,562	1,428	1,517
V. South-Western	4,993,660	1,879,898	2,919	2,828	2,756
VI. West Midland	3,865,332	2,720,003	4,770	4,196	4,275
VII. North Midland	3,540,797	1,406,823	2,274	2,126	2,044
VIII. North-Western	2,000,227	3,388,370	7,468	6,536	6,479
IX. Yorkshire	3,654,636	2,395,299	4,862	4,124	4,333
X. Northern	3,492,322	1,414,066	2,943	2,529	2,542
XI. Monmthsh. & Wales	5,218,588	1,420,804	2,445	2,240	2,272

7 DIVISIONS. (England and Wales.)	8 9 10 BIRTHS in Quarters ended 30th June.			11 12 13 DEATHS in Quarters ended 30th June.		
	1872.	1871.	1870.	1872.	1871.	1870.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES....Totals	208,711	200,877	203,484	120,914	120,870	121,246
I. London	29,141	27,290	28,492	17,096	18,815	17,717
II. South-Eastern	17,791	16,961	17,507	9,375	10,099	10,691
III. South Midland	12,840	12,021	12,233	6,703	6,982	7,012
IV. Eastern	10,373	9,985	10,283	5,464	5,799	6,075
V. South-Western	14,825	14,627	14,939	8,994	8,759	9,924
VI. West Midland	25,714	24,957	24,822	14,510	13,465	14,240
VII. North Midland	12,626	12,350	12,604	7,574	6,662	7,037
VIII. North-Western	34,014	32,439	32,786	20,456	20,786	19,703
IX. Yorkshire	23,379	22,797	22,930	14,469	13,158	13,883
X. Northern	15,018	14,366	13,841	8,423	8,822	7,015
XI. Monmthsh. & Wales	12,990	13,084	13,047	7,850	7,523	7,949

G.—General Meteorological Table, Quarter ended June, 1872.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, ESQ., F.R.S., &c.]

1872. Months.		Temperature of									Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.						Water of the Thames
		Mean.	Diff. from Aver- age of 101 Years.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.
April ...	48·3	0 +2·3	0 +1·2	44·8	0 +0·7	41·0	0 +0·3	19·3	0 +0·7	50·7	In. ·257	In. +·003	Gr. 2·9	Gr. 0·0
May ...	50·9	−1·7	−2·1	47·3	−1·9	43·6	−1·9	19·7	−0·8	54·5	·284	−·019	3·3	−0·1
June ...	59·2	+1·0	+0·2	54·9	+0·3	51·1	+0·4	21·3	+0·2	61·9	·375	+·005	4·2	+0·1
Mean ...	52·8	+0·5	−0·2	49·0	−0·3	45·2	−0·4	20·1	0·0	55·7	·305	−·004	3·5	0·0

1872. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Amnt.	Diff. from Aver- age of 57 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
											At or below 30°.	Be- tween 30° and 40°.	Above 40°.		
April ...	76	− 3	In. 29·735	In. −·034	Gr. 542	Gr. − 1	In. 1·0	In. −0·7	Miles. 273	8	19	3	21·3	45·2	
May ...	76	0	29·736	−·045	539	− 2	3·1	+0·9	257	5	15	11	25·8	47·4	
June ...	75	+ 1	29·735	−·081	530	− 2	1·6	−0·3	264	1	8	21	28·5	54·8	
Mean ...	76	− 1	29·735	−·053	537	− 2	Sum 5·7	Sum 0·0	Mean 265	Sum 14	Sum 42	Sum 35	Lowest 21·3	Highest 54·8	

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of April was 48°·3, being 2°·3 higher than the average of 101 years, higher than the corresponding value last year, but lower than those in 1869 and 1870.

The mean temperature of May was 50°·9, being 1°·7 lower than the average of 101 years, lower than the temperature in the same month in 1871 and 1870, but higher than in 1869, when 50°·5. was recorded.

The mean temperature of June was 59°·2, being 1°·0 higher than the average of 101 years, 4°·4 higher than the corresponding value last year, but 1°·7 lower than in 1870.

The mean high day temperatures were 1°·5 and 0°·2 respectively higher than their averages in April and June, but 2°·5 lower in May.

The mean low night temperatures of April were 1°·5 higher, of June, the same as, and of May 1°·6 lower than their respective averages.

Therefore the days and nights of April were warm, and of May cold, while those of June were of equable temperature.

H.—Special Meteorological Table, Quarter ended 30th June, 1872.

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey.....	29·638	78·0	39·0	39·0	24·8	10·1	51·1	82
Osborne	29·613	82·7	30·9	51·8	41·8	18·8	51·8	81
Barnstaple	29·598	79·0	32·0	47·0	35·3	15·0	52·3	81
Royal Observatory	29·603	86·0	29·6	56·4	42·1	20·0	52·8	75
Royston	29·626	88·0	26·8	61·2	48·0	21·9	51·7	78
Norwich	29·592	82·5	27·2	55·3	41·5	19·2	51·5	80
Derby	29·547	84·0	31·0	53·0	41·6	17·2	50·7	87
Hawarden	29·585	80·0	34·0	46·0	35·5	9·5	51·1	81
Stonyhurst	29·558	81·5	30·2	51·3	38·8	15·3	49·4	83
Leeds	29·567	89·0	31·0	58·0	45·0	19·6	51·6	77
North Shields.....	29·631	71·0	33·0	38·0	31·5	12·9	48·7	81

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount Collected.
		N.	E.	S.	W.			
Guernsey.....	1·3	9	5	7	10	4·6	53	9·51
Osborne	0·4	6	5	9	11	5·8	48	5·73
Barnstaple	1·2	3	3	10	14	3·9	44	9·93
Royal Observatory	0·4	7	5	8	11	6·3	43	5·71
Royston	—	6	2	10	13	6·2	51	7·26
Norwich	—	7	4	9	10	—	43	6·33
Derby	—	7	3	7	13	—	48	9·14
Hawarden	2·3	9	3	7	11	6·1	59	9·96
Stonyhurst	—	5	4	5	17	7·4	73	11·92
Leeds	1·5	6	4	7	13	8·0	46	9·16
North Shields.....	1·8	7	6	6	12	6·8	53	6·85

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER

ENDED 30TH JUNE, 1872.

I.—*Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year, during each Quarter of the Years 1872-68 inclusive.*

	1872.		1871.		1870.		1869.		1868.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1st Quarter—										
Births	29,506	3·47	28,902	3·43	28,674	3·44	28,429	3·44	28,697	3·50
Deaths	21,245	2·50	19,756	2·34	22,184	2·66	20,431	2·47	18,042	2·20
Marriages ..	5,820	0·68	5,415	0·64	5,631	0·67	5,291	0·64	5,287	0·64
Mean Tem- perature }	40°·7		39°·1		36°·9		40°·0		40°·6	
2nd Quarter—										
Births	30,726	3·61	30,583	3·63	30,645	3·67	29,472	3·56	30,983	3·78
Deaths	19,045	2·24	18,715	2·22	17,984	2·15	19,449	2·35	16,958	2·07
Marriages ..	5,398	0·75	5,946	0·70	5,754	0·69	5,596	0·67	5,661	0·69
Mean Tem- perature }	49°·2		48°·7		51°·0		48°·4		51°·0	
3rd Quarter—										
Births	—	—	28,689	3·40	28,272	3·39	27,646	3·33	28,354	3·46
Deaths	—	—	16,835	2·00	16,555	2·03	16,532	2·00	16,659	2·03
Marriages ..	—	—	5,424	0·64	5,301	0·63	4,870	0·59	4,704	0·57
Mean Tem- perature }	—		56°·3		57°·1		56°·4		57°·4	
4th Quarter—										
Births	—	—	27,953	3·32	27,832	3·26	27,848	3·37	27,480	3·35
Deaths	—	—	19,338	2·29	17,344	2·08	19,377	2·34	17,757	2·17
Marriages ..	—	—	7,181	0·85	7,102	0·85	6,326	0·76	6,203	0·77
Mean Tem- perature }	—		41°·3		39°·6		40°·9		41°·5	
Year—										
Population.	3,397,625		3,366,375		3,335,418		3,304,747		3,274,360	
Births	—	—	116,127	3·45	115,423	3·46	113,395	3·41	115,514	3·53
Deaths	—	—	74,644	2·22	74,067	2·22	75,789	2·29	69,416	2·12
Marriages ..	—	—	23,966	0·71	23,788	0·71	22,083	0·66	21,855	0·66

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts during the Quarter ending 30th June, 1872, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,360,018	3,397,625	30,726	3·61	27	2,960	8·7	11·4
Town districts	1,919,528	1,956,648	19,118	3·98	25	1,637	8·5	11·6
Rural ,,	1,440,490	1,440,977	11,608	3·22	31	1,053	9·0	11·0

	Population.		Deaths.			Marriages.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,360,018	3,397,625	19,045	2·24	44	6,398	0·75	132
Town districts	1,919,528	1,956,648	12,620	2·58	38	4,320	0·88	112
Rural ,,	1,440,490	1,440,977	6,425	1·78	56	2,078	0·57	173

III.—*Bastardy Table:—Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 30th June, 1872.*

Divisions.	Per Cent. of Illegi- timate.	Counties.	Per Cent. of Illegi- timate.	Counties.	Per Cent. of Illegi- timate.	Counties.	Per Cent. of Illegi- timate.
SCOTLAND	8·7						
Northern	6·3	Shetland	5·8	Forfar	10·2	Lanark	7·4
North-Western	6·5	Orkney	4·9	Perth	9·4	Linlithgow.	9·7
North-Eastern	13·8	Caithness	7·4	Fife	8·1	Edinburgh.	7·4
East Midland..	9·4	Sutherland....	7·4	Kinross	10·0	Haddington	10·4
West Midland.	6·7	Ross and } Cromarty }	4·6	Clackman- } nan	9·3	Berwick	8·7
South-Western	7·3	Inverness	8·3	Stirling	6·1	Peebles	14·1
South-Eastern.	8·2	Nairn	11·9	Dumbarton ..	6·1	Selkirk	10·8
Southern	14·2	Elgin	16·0	Argyll	8·5	Roxburgh ..	9·7
		Banff	14·4	Bute	6·0	Dumfries	16·5
		Aberdeen	13·4	Renfrew	5·9	Kirkeud- } bright .. }	15·4
		Kincardine....	13·6	Ayr	8·4	Wigtown	15·2

IV.—*Divisional Table*.—MARRIAGES, BIRTHS, and DEATHS Registered in the Quarter ended 30th June, 1872.

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1871. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND Totals	19,639,377	3,360,018	6,398	30,726	19,045
I. Northern	2,261,622	127,191	114	750	479
II. North-Western	4,739,876	166,351	148	986	665
III. North-Eastern	2,429,594	393,199	660	3,304	1,784
IV. East Midland	2,790,492	559,676	1,017	4,669	2,733
V. West Midland	2,693,176	251,088	386	2,151	1,361
VI. South-Western	1,462,397	1,183,218	2,763	12,910	8,032
VII. South-Eastern	1,192,524	470,206	972	4,261	2,969
VIII. Southern	2,069,696	209,089	338	1,695	1,022

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 31st March, 1872; and BIRTHS and DEATHS, in the Quarter ended 30th June, 1872.

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Popu- lation, 1871. (Persons.)						
England and } Wales	37,325,	22,704,	No.	Ratio.	No.	Ratio.	No.	Ratio.
Scotland	19,639,	3,359,	5,820	1·8	208,711	9·2	120,914	5·3
Ireland	20,323,	5,403,	10,295	1·7	30,726	9·2	19,045	5·6
				1·9	40,027	7·4	26,053	4·8
GREAT BRITAIN } AND IRELAND }	77,287,	31,466,	56,672	1·8	279,464	8·9	166,012	5·3

Note.—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have *succeeded* in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births and deaths are much under those of England and Scotland.—ED. S. J.

I.—*Number of Occupiers of Land and of Owners of Live Stock; the Average Size of each Holding in 1871.*

1	2	3	4	1	2	3	4
ENGLAND.	Number of Returns Obtained from		Average Acreage of each Occupier.	ENGLAND.	Number of Returns Obtained from		Average Acreage of each Occupier.
— Counties, Proper.	Occupiers of Land.	Owners of Live Stock only.		— Counties, Proper.	Occupiers of Land.	Owners of Live Stock only.	
<i>South-Eastern—</i>				<i>North Midland—</i>			
Surrey	5,543	335	53	Leicester	8,443	47	55
Kent	11,387	175	64	Rutland.....	1,427	3	59
Sussex	8,844	77	73	Lincoln	25,315	127	58
Southampton ..	8,951	108	77	Nottingham	8,533	59	51
Berks	4,212	59	87	Derby	13,744	28	36
Total	38,937	754	71	Total	57,462	264	51
<i>South Midland—</i>				<i>North-Western—</i>			
Middlesex	2,853	647	40	Chester	13,192	97	38
Hertford	4,558	25	73	Lancaster	22,234	367	33
Buckingham ...	5,663	17	70	Total	35,426	464	35
Oxford.....	4,670	6	87	<i>York—</i>			
Northampton ..	7,019	14	78	East Riding	8,388	54	78
Huntingdon	2,939	7	70	North „	15,182	256	53
Bedford	4,146	3	61	West „	31,626	220	37
Cambridge	7,305	12	64	Total	55,196	530	56
Total	39,153	731	68	<i>Northern—</i>			
<i>Eastern—</i>				Durham	6,354	39	64
Essex	9,457	58	86	Northumberland	5,492	322	121
Suffolk	9,876	43	76	Cumberland	7,609	34	71
Norfolk	18,703	73	57	Westmorland ...	3,597	5	64
Total	38,036	174	71	Total	23,052	400	107
<i>South-Western—</i>				Total of England..	407,556	4,692	57
Wilts	7,869	31	92	<i>Wales—</i>			
Dorset	5,216	19	89	Monmouth	4,728	10	48
Devon	18,300	43	57	North Wales.....	27,090	131	39
Cornwall	13,538	23	37	South „	30,078	108	54
Somerset	16,686	26	48	Total of Wales....	61,888	249	47
Total	61,609	142	65	Total of Scot- land	80,340	2,630	55
<i>West Midland—</i>				Total of Great Britain	549,784	7,571	56
Gloucester	11,376	26	57				
Hereford.....	7,129	15	59				
Salop	11,436	58	60				
Stafford	13,548	245	43				
Worcester	7,538	77	51				
Warwick	7,658	812	62				
Total	58,685	1,233	55				

* See “Annual Reports” of the Registrar-General for Ireland.

II.—Population, Area, Abstract of Acreage under Crops, &c., and Number of Live

	Years.	England.	Wales.	Scotland.	Total for Great Britain.
Total population	1871	21,488,	1,216,	3,359,	26,063,
Total area (in statute acres)	—	32,590,	4,734,	19,639,	56,964,
<i>Abstract of Acreage—</i>					
Under all kinds of crops, bare fallow, and grass	1870	23,409,	2,548,	4,451,	30,408,
Under corn crops (including beans and peas)	'71	23,718,	2,605,	4,516,	30,839,
Under green crops	'70	7,570,	554,	1,424,	9,548,
Under green crops	'71	7,684,	561,	1,431,	9,675,
Under green crops	'70	2,760,	130,	697,	3,587,
Under green crops	'71	2,898,	137,	704,	3,738,
„ bare fallow	'70	549,	38,	23,	611,
„ bare fallow	'71	484,	38,	21,	543,
„ grass—Clover, &c. under rotation	'70	2,767,	398,	1,340,	4,505,
„ grass—Clover, &c. under rotation	'71	2,694,	375,	1,300,	4,369,
Permanent pasture	'70	9,680,	1,428,	965,	12,073,
Permanent pasture	'71	9,882,	1,494,	1,059,	12,435,
<i>Percentage of Acreage—*</i>					
Under corn crops (including beans and peas)	1870	32·3	21·7	32·0	31·4
Under corn crops (including beans and peas)	'71	32·4	21·5	31·7	31·4
Under green crops	'70	11·8	5·1	15·7	11·8
Under green crops	'71	12·3	5·2	15·5	12·1
„ bare fallow	'70	2·4	1·5	0·5	2·0
„ bare fallow	'71	2·0	1·5	0·4	1·8
„ grass—Clover, &c. under rotation	'70	10·8	15·6	30·1	14·8
„ grass—Clover, &c. under rotation	'71	11·4	14·4	28·8	14·2
Permanent pasture	'70	41·4	56·0	21·7	39·7
Permanent pasture	'71	41·7	57·4	23·5	40·3
Total	—	100·0	100·0	100·0	100·0
Acreage of orchards, or of arable or grass land, used also for fruit trees }	1871	177,	23,	7,	207,
Acreage of woods, coppices, and plantations.....	'71	1,314,	127,	735,	2,175,
<i>Abstract of Live Stock—</i>					
Total number of horses†	1870	978,	116,	173,	1,267,
Total number of horses†	'71	963,	117,	174,	1,254,†
„ cattle	'70	3,757,	605,	1,041,	5,403,
„ cattle	'71	3,671,	597,	1,070,	5,338,
„ sheep	'70	18,940,	2,706,	6,751,	28,398,
„ sheep	'71	17,530,	2,706,	6,883,	27,120,
„ pigs	'70	1,814,	199,	159,	2,171,
„ pigs	'71	2,079,	225,	196,	2,500,
<i>Number to every 100 Acres under Crops, Fallow, and Grass—</i>					
Horses†.....	1870	4·2	4·6	3·9	4·2
Horses†.....	'71	4·1	4·5	3·9	4·1†
Cattle.....	'70	16·0	23·7	23·4	17·8
Cattle.....	'71	15·5	22·9	23·7	17·3
Sheep.....	'70	80·9	106·2	151·7	93·4
Sheep.....	'71	73·9	103·9	152·4	87·9
Pigs	'70	7·7	7·8	3·6	7·1
Pigs	'71	8·8	8·7	4·3	8·1
<i>Number of Returns Obtained—</i>					
From occupiers of land	1871	412,	57,	80,	550,
„ owners of live stock only	'71	5,	—	3,	8,

* Stated exclusively of the small percentages for flax and hops.

† In Great Britain only horses used for agriculture, unbroken horses, and mares kept solely for breeding, are included in the returns. The proportionate number of horses for 100 acres in Great Britain would be increased from 4·1 to 6·8 by adding 864,115, the number of horses subject to duty, to the number included in the Agricultural Returns. In Ireland all descriptions of horses are included in the returns.

Stock, in each Division of the United Kingdom. [000's omitted from the quantities.]

Ireland.‡	Isle of Man.	Channel Islands.		Total for United Kingdom.	Years.	
		Jersey.	Guernsey, &c.			
5,403,	54,	91,		31,610,	1871	Total population
20,323,	180,	29,	18,	77,514,	—	Total area (in statute acres)
15,653,§	87,	19,	12,	46,177,	1870	<i>Abstract of Acreage—</i> Under all kinds of crops, bare fallow, and grass
15,711,§	87,	19,	12,	46,667,	'71	
2,173,	28,	4,	2,	11,755,	'70	Under corn crops (including beans and peas)
2,124,	28,	4,	2,	11,833,	'71	
1,499,	13,	6,	3,	5,107,	'70	Under green crops
1,512,	13,	6,	3,	5,271,	'71	
19,	—	—	—	630,	'70	" bare fallow
22,	—	—	—	566,	'71	
1,776,	32,	6,	1,	6,320,	'70	" grass—Clover, &c. under rotation
1,828,	32,	6,	1,	6,237,	'71	
9,991,	13,	3,	5,	22,085,	'70	Permanent pasture
10,069,	13,	3,	5,	22,526,	'71	
13'9	32'6	19'4	17'0	25'5	1870	<i>Percentage of Acreage—*</i> Under corn crops (including beans and peas)
13'6	32'6	19'4	17'0	25'4	'71	
9'6	14'7	30'2	27'8	11'1	'70	Under green crops
9'6	14'7	30'2	27'8	11'3	'71	
0'1	0'4	0'8	1'6	1'4	'70	" bare fallow
0'1	0'4	0'8	1'6	1'2	'72	
11'3	37'2	33'5	7'5	13'7	'70	" grass—Clover, &c. under rotation
11'6	37'2	33'5	7'5	13'4	'71	
63'8	15'1	16'1	46'1	47'8	'70	Permanent pasture
64'1	15'1	16'1	46'1	48'3	'71	
100'0	100'0	100'0	100'0	100'0	—	Total
—	—	—	—	—	1871	{ Acreage of orchards, or of arable or grass land, used also for fruit trees Acreage of woods, coppices, and plantations
324,	—	—	—	—	'71	
531,	6,	2,	2,	1,808,	1870	<i>Abstract of Live Stock—</i> Total number of horses†
538,	6,	2,	2,	1,802,	'71	
3,796,	17,	11,	7,	9,235,	'70	" cattle
3,973,	17,	11,	7,	9,346,	'71	
4,334,	54,	1,	1,	32,787,	'70	" sheep
4,229,	54,	1,	1,	31,404,	'71	
1,459,	6,	7,	6,	3,651,	'70	" pigs
1,617,	6,	7,	6,	4,137,	'71	
3'4	6'7	12'3	16'1	3'9	1870	<i>Number to every 100 Acres under Crops, Fallow, and Grass—</i> Horses†
3'4	6'7	12'3	16'1	3'9	'71	
24'3	20'1	58'2	58'9	20'0	'70	Cattle
25'3	20'1	58'2	58'9	20'0	'71	
27'7	61'9	3'4	8'5	71'0	'70	Sheep
26'9	61'9	3'4	8'5	67'3	'71	
9'3	7'3	39'1	55'5	7'9	'70	Pigs
10'2	7'3	39'1	55'5	8'8	'71	
—	—	—	—	—	1871	<i>Number of Returns Obtained—</i> From occupiers of land
—	—	—	—	—	'71	

‡ The detailed returns for Ireland will be found in the annual reports prepared by the Registrar-General and laid before Parliament.

§ Including under flax, 194,893 acres in 1870, and 156,883 acres in 1871.

III.—Acreage under Crops and Grass and Number

1	2	3	4	5	6	7	8	9	10	11
ENGLAND. Counties, Proper.	Popula- tion on 3rd April, 1871.	Total Area in Statute Acres.	Number of Acres under Crops and Grass.					Per- centage of Corn Crops to Total under all kinds of Crops, Bare Fallow, and Grass.	HORSES. Number to every 100 Acres under Crops, Bare Fallow, and Grass.	CATTLE Number to every 100 Acres under Crops, Bare Fallow, and Grass.
			Total under all kinds of Crops, Bare Fallow, and Grass.	Whereof under						
				Corn Crops.	Green Crops.	Clover and Artifi- cial and other Grasses under Rota- tion.	Perma- nent Pasture, and Grass not broken up in Rotation (exclusive of Heath or Mountain Land).			
<i>South-Eastern—</i>										
Surrey	1,090,	479,	292,	101,	45,	32,	101,	34·6	4·2	12·7
Kent	848,	1,039,	735,	256,	82,	61,	291,	34·8	3·7	8·2
Sussex	417,	937,	645,	213,	75,	68,	259,	33·0	3·7	13·4
Southampton ..	544,	1,070,	692,	263,	142,	111,	155,	38·1	3·9	7·6
Berks	196,	451,	368,	153,	63,	36,	110,	41·6	3·8	8·3
Total	3,095,	3,976,	2,732,	986,	407,	308,	916,	36·8	3·9	9·7
<i>South Midland—</i>										
Middlesex	2,539,	180,	115,	20,	12,	8,	74,	17·2	4·3	18·6
Hertford	193,	391,	335,	153,	46,	39,	87,	45·6	3·9	7·5
Buckingham ...	176,	467,	398,	139,	38,	30,	184,	35·0	4·0	14·5
Oxford	178,	473,	408,	167,	62,	42,	134,	40·8	3·9	10·9
Northampton ..	244,	630,	548,	188,	50,	34,	266,	34·3	3·5	17·5
Huntingdon	63,	230,	208,	101,	26,	14,	57,	48·7	4·4	10·7
Bedford	146,	296,	255,	126,	38,	16,	73,	47·1	4·0	10·4
Cambridge	186,	525,	468,	259,	82,	42,	71,	55·4	5·0	8·1
Total	3,725,	3,192,	2,735,	1,148,	354,	225,	946,	42·0	4·1	12·0
<i>Eastern—</i>										
Essex	466,	1,061,	811,	421,	110,	72,	171,	51·9	4·7	7·6
Suffolk	349,	948,	756,	391,	126,	81,	139,	51·7	5·5	7·4
Norfolk	439,	1,354,	1,060,	458,	204,	171,	220,	43·3	5·3	9·2
Total	1,254,	3,363,	2,627,	1,270,	440,	324,	530,	48·3	5·1	8·2
<i>South-Western—</i>										
Wilts	257,	865,	727,	221,	108,	81,	303,	30·5	2·9	10·9
Dorset	196,	632,	462,	118,	63,	50,	223,	25·6	3·1	14·8
Devon	601,	1,657,	1,046,	307,	169,	156,	390,	29·4	4·3	18·5
Cornwall	362,	874,	507,	154,	63,	133,	132,	30·3	5·3	27·1
Somerset	463,	1,047,	802,	153,	72,	66,	505,	19·0	3·6	22·6
Total	1,879,	5,075,	3,544,	953,	465,	486,	1,553,	26·9	3·8	18·6
<i>West Midland—</i>										
Gloucester	534,	805,	645,	183,	70,	93,	293,	28·3	3·5	16·2
Hereford	126,	535,	424,	114,	40,	37,	218,	27·0	4·4	15·9
Salop	248,	826,	685,	184,	69,	80,	343,	26·8	3·8	17·6
Stafford	857,	729,	577,	129,	47,	52,	341,	22·4	3·3	21·5
Worcester	339,	472,	388,	131,	36,	34,	175,	33·8	4·4	12·2
Warwick	634,	564,	476,	158,	37,	42,	229,	33·2	3·6	16·5
Total	2,738,	3,931,	3,195,	899,	299,	338,	1,599,	28·1	3·7	16·9

* For the Irish Statistics,

of Live Stock in 1871. [000's omitted, consequently 3,095, = 3,095,000.]

12	13	14	15	16	17	18	19	20	21	22	23	24
SHEEP.	PIGS.	Number of Acres Under										ENGLAND. — Counties, Proper.
Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Wheat.	Barley or Bere.	Oats.	Beans.	Peas.	Pota- toes.	Turnips and Swedes.	Man- gold.	Vetches, Lucerne, and any other Crops except Clover and Grass.	Bare Fallow, and Uncrop- ped Arable Land.	
30'9	12'0	44,	19,	25,	3,	8,	4,	20,	9,	8,	10,	<i>South-Eastern</i> Surrey Kent Sussex Southamptn. Berks
122'5	8'6	113,	41,	53,	25,	23,	15,	33,	10,	19,	8,	
81'1	7'0	101,	24,	63,	10,	14,	3,	34,	10,	17,	21,	
79'1	10'4	111,	63,	64,	6,	14,	6,	93,	12,	22,	18,	
73'8	10'5	63,	39,	27,	13,	10,	2,	37,	6,	14,	5,	
85'4	9'3	432,	186,	232,	57,	69,	30,	217,	47,	80,	62,	Total
26'2	12'3	9,	2,	5,	1,	2,	3,	2,	2,	4,	—	<i>South Midland</i> Middlesex Hertford Buckingham Oxford Northamptn. Huntingdon Bedford Cambridge
49'9	10'0	64,	46,	25,	10,	7,	2,	27,	6,	8,	11,	
66'9	9'7	59,	31,	24,	16,	10,	2,	22,	5,	8,	6,	
79'6	9'7	63,	53,	23,	17,	10,	2,	41,	7,	9,	5,	
90'7	6'2	81,	55,	19,	21,	12,	3,	28,	6,	8,	10,	
71'2	10'6	47,	22,	11,	13,	7,	5,	4,	4,	7,	9,	
66'6	11'3	54,	29,	9,	20,	8,	6,	12,	4,	9,	7,	
60'7	9'7	130,	55,	36,	27,	11,	13,	16,	17,	18,	13,	
68'9	9'3	507,	293,	152,	125,	67,	36,	152,	51,	71,	61,	Total
43'0	11'6	194,	104,	40,	51,	31,	12,	26,	32,	32,	36,	<i>Eastern—</i> Essex Suffolk Norfolk
56'9	15'3	158,	138,	15,	42,	30,	2,	61,	37,	22,	18,	
65'8	9'1	206,	187,	32,	14,	11,	7,	144,	40,	8,	6,	
56'2	11'3	558,	429,	87,	109,	72,	21,	231,	109,	62,	60,	Total
99'4	9'0	98,	67,	32,	12,	11,	5,	65,	6,	22,	13,	<i>South-Western</i> Wilts Dorset Devon Cornwall Somerset
107'6	8'8	46,	41,	21,	3,	5,	3,	43,	6,	7,	6,	
80'2	9'0	125,	89,	89,	1,	3,	21,	85,	28,	7,	33,	
71'7	12'0	54,	55,	45,	—	—	9,	32,	11,	1,	25,	
79'7	11'3	75,	36,	22,	14,	6,	12,	36,	13,	6,	7,	
86'3	9'9	398,	288,	209,	30,	25,	50,	261,	64,	43,	84,	Total
64'7	10'0	96,	44,	16,	17,	11,	8,	44,	5,	11,	7,	<i>West Midland</i> Gloucester Hereford Salop Stafford Worcester Warwick
70'9	6'5	61,	23,	12,	8,	9,	3,	27,	2,	8,	8,	
64'0	9'4	86,	55,	26,	5,	9,	7,	52,	6,	4,	9,	
49'2	9'7	56,	32,	30,	4,	6,	10,	27,	5,	4,	8,	
55'0	10'6	69,	21,	8,	20,	12,	7,	15,	5,	8,	8,	
73'6	9'2	78,	29,	14,	24,	12,	4,	20,	6,	7,	10,	
62'7	9'2	446,	204,	106,	78,	59,	39,	185,	29,	42,	50,	Total

see *ante*, Table II, p. 401.

III.—*Acreage under Crops and Grass and Number of Live*

1	2	3	4 5 6 7 8 Number of Acres under Crops and Grass.					9	10	11
ENGLAND. Counties, Proper.	Popula- tion on 3rd April, 1872.	Total Area in Statute Acres.	Total under all kinds of Crops, Bare Fallow, and Grass.	Whereof under				Per- centage of Corn Crops to Total under all kinds of Crops, Bare Fallow, and Grass.	HORSES — Number to every 100 Acres under Crops, Bare Fallow, and Grass.	CATTLE — Number to every 100 Acres under Crops, Bare Fallow, and Grass.
				Corn Crops.	Green Crops.	Clover and Artifi- cial and other Grasses under Rota- tion.	Perma- nent Pasture, and Grass not broken up in Rotation (exclusive of Heath or Mountain Land).			
<i>North Midland—</i>										
Leicester	269,	514,	466,	119,	29,	27,	284,	25·6	3·4	25·3
Rutland.....	22,	96,	84,	29,	9,	6,	40,	33·6	3·4	16·4
Lincoln	436,	1,777,	1,461,	624,	244,	164,	409,	42·7	4·3	12·7
Nottingham ...	320,	526,	439,	168,	57,	51,	151,	38·2	4·1	15·0
Derby	381,	658,	496,	82,	25,	43,	339,	16·6	3·4	24·6
Total	1,428,	3,571,	2,946,	1,022,	364,	291,	1,223,	34·7	3·9	17·2
<i>North-Western—</i>										
Chester	561,	707,	510,	91,	37,	66,	315,	18·1	3·6	29·4
Lancaster	2,819,	1,219,	736,	107,	55,	84,	485,	14·5	4·2	29·2
Total	3,380,	1,926,	1,246,	198,	92,	150,	800,	15·9	3·9	29·3
<i>York—</i>										
West Riding....	1,831,	771,	1,159,	262,	104,	98,	675,	42·8	5·6	11·0
East „	313,	1,709,	657,	282,	111,	88,	158,	22·6	3·9	18·7
North „	292,	1,350,	813,	230,	82,	81,	390,	28·3	4·6	17·3
Total	2,436,	3,830,	2,629,	774,	297,	267,	1,223,	29·4	4·5	15·9
<i>Northern—</i>										
Durham	685,	623,	408,	105,	36,	54,	189,	25·9	3·8	13·2
Northumber- land	387,	1,249,	662,	152,	64,	91,	336,	23·0	2·7	13·2
Cumberland ...	220,	1,001,	538,	110,	51,	109,	262,	20·5	3·6	22·6
Westmorland	65,	485,	229,	23,	12,	23,	170,	10·0	3·0	21·9
Total	1,357,	3,358,	1,837,	390,	163,	277,	957,	21·2	3·2	17·4
Total of Eng- land	21,292,	32,222,	23,491,	7,640,	2,881,	2,667,	9,748,	32·5	4·1	15·5
<i>Wales—</i>										
Monmouth	195,	368,	226,	43,	16,	27,	133,	19·2	4·3	17·0
South Wales....	763,	2,732,	1,542,	312,	74,	196,	937,	20·1	4·7	21·1
North „	452,	2,003,	1,062,	248,	62,	178,	557,	23·5	4·3	25·3
Total of Wales	1,410,	5,103,	2,830,	603,	152,	401,	1,627,	21·5	4·5	22·9
Total of Scot- land	3,359,	19,639,	4,516,	1,431,	704,	1,300,	1,059,	21·5	3·9	23·7
Total of Great Britain	26,063,	56,964,	30,837,	9,675,	3,738,	4,369,	12,434,	31·4	4·1	17·3

* For the Irish Statistics,

Stock in 1871—Contd. [000's omitted, consequently 1,428, = 1,428,000.]

12	13	14	15	16	17	18	19	20	21	22	23	24
SHEEP.	PIGS.	Number of Acres Under										ENGLAND. — Counties, Proper
Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Wheat.	Barley or Bere.	Oats.	Beans.	Peas.	Potatoes.	Turnips and Swedes.	Man-gold.	Vetches, Lucerne, and any other Crops except Clover and Grass.	Bare Fallow, and Uncropped Arable Land.	
92·3	6·1	48,	33,	21,	9,	7,	13,	15,	6,	4,	6,	<i>North Midland</i> Leicester Rutland Lincoln Nottingham Derby
115·2	4·3	10,	11,	4,	1,	1,	—	7,	—	1,	1,	
101·9	7·6	306,	154,	104,	32,	24,	48,	137,	20,	20,	18,	
57·8	6·5	74,	48,	20,	11,	12,	7,	37,	5,	7,	12,	
46·4	8·2	33,	16,	28,	2,	3,	4,	12,	2,	4,	7,	
83·5	7·2	471,	262,	177,	55,	47,	62,	208,	33,	36,	44,	Total
20·2	12·7	35,	5,	45,	4,	1,	25,	8,	2,	1,	2,	<i>North-Western</i> Chester Lancaster
41·7	6·9	37,	11,	52,	6,	—	39,	11,	2,	2,	4,	
32·8	9·2	72,	16,	97,	10,	1,	64,	19,	4,	3,	6,	Total
73·4	8·1	104,	75,	73,	14,	10,	30,	58,	4,	9,	16,	<i>York—</i> West Riding East „ North „
58·4	6·7	116,	61,	57,	16,	13,	12,	76,	4,	9,	18,	
81·4	7·9	74,	70,	66,	10,	7,	13,	58,	3,	4,	29,	
69·2	7·4	294,	206,	196,	40,	30,	55,	192,	11,	22,	63,	Total
45·8	3·2	43,	17,	38,	3,	4,	9,	22,	—	4,	24,	<i>Northern—</i> Durham { Northum- berland Cumberland Westmorlnd.
128·8	2·6	42,	36,	63,	5,	5,	7,	52,	—	4,	18,	
90·2	6·7	26,	11,	72,	—	1,	13,	34,	2,	—	6,	
146·6	2·9	2,	3,	17,	—	—	2,	9,	—	—	1,	
101·3	3·9	113,	67,	190,	8,	10,	31,	117,	2,	8,	49,	Total
73·9	8·8	3,291,	1,952,	1,446,	512,	380,	388,	1,582,	350,	367,	479,	{ Total of Eng- land
79·0	7·4	21,	12,	8,	1,	2,	3,	10,	1,	2,	5,	<i>Wales—</i> Monmouth South Wales North „
111·5	7·1	63,	104,	142,	—	2,	25,	41,	4,	3,	21,	
121·2	10·5	63,	65,	111,	4,	3,	27,	29,	3,	3,	16,	
103·9	8·7	147,	181,	261,	5,	7,	55,	80,	8,	8,	42,	Total of Wales
152·4	4·3	133,	252,	1,008,	24,	3,	184,	501,	2,	13,	21,	{ Total of Scot- land
87·9	8·1	3,571,	2,385,	2,715,	541,	390,	627,	2,163,	360,	388,	542,	{ Total of Gt. Britain

Trade of United Kingdom, 1872-71-70.—*Distribution of Exports* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Three Months.					
	1872.		1871.		1870.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, } Norway, Denmark & Iceland, & Heligoland }	6,375,	1,099,	4,082,	848,	3,452,	623,
Central Europe; viz., Prussia, Germany, } the Hanse Towns, Holland, and Belgium }	10,392,	12,528,	10,339,	9,275,	7,129,	9,006,
Western Europe; viz., France, Portugal } (with Azores, Madeira, &c.), and Spain } (with Gibraltar and Canaries)	13,660,	6,129,	9,262,	6,331,	10,405,	4,645,
Southern Europe; viz., Italy, Austrian } Empire, Greece, Ionian Islands, and Malta }	1,828,	2,303,	1,980,	2,276,	1,281,	2,122,
Levant; viz., Turkey, with Wallachia and } Moldavia, Syria and Palestine, and Egypt }	7,293,	3,323,	5,908,	2,805,	5,826,	4,340,
Northern Africa; viz., Tripoli, Tunis, } Algeria and Morocco	261,	93,	129,	42,	65,	64,
Western Africa	376,	234,	443,	211,	182,	220,
Eastern Africa; with African Ports on } Red Sea, Aden, Arabia, Persia, Bourbon, } and Kooria Moorla Islands	14,	67,	101,	22,	26,	85,
Indian Seas, Siam, Sumatra, Java, Philip- } pines; other Islands	638,	274,	491,	274,	215,	349,
South Sea Islands	61,	10,	20,	—	11,	9,
China, including Hong Kong	4,241,	2,711,	3,974,	2,908,	3,422,	2,316,
United States of America	17,370,	12,102,	20,190,	9,248,	11,749,	7,523,
Mexico and Central America	487,	251,	282,	312,	417,	195,
Foreign West Indies and Hayti	619,	790,	366,	796,	578,	831,
South America (Northern), New Granada, } Venezuela, and Ecuador }	333,	776,	330,	614,	151,	500,
" (Pacific), Peru, Bolivia, } Chili, and Patagonia }	2,481,	1,189,	2,170,	848,	1,270,	1,106,
" (Atlantic) Brazil, Uruguay, } and Buenos Ayres	3,267,	3,048,	2,520,	1,994,	1,834,	1,676,
Whale Fisheries; Grnlnd., Davis' Straits, } Southn. Whale Fishery, & Falkland Islands }	11,	3,	—	—	11,	1,
Total—Foreign Countries	69,707,	46,930,	62,587,	38,804,	48,024,	35,611,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	10,613,	5,368,	6,950,	4,952,	3,121,	5,462,
Austral. Cols.—N. So. W., Vict., and Queensld.	3,332,	1,882,	2,380,	1,302,	2,797,	1,526,
" " So. Aus., W. Aus., Tasm., } and N. Zealand	1,709,	608,	1,118,	433,	607,	572,
British North America	238,	658,	509,	584,	369,	766,
" W. Indies with Btsh. Guiana & Honduras	949,	883,	935,	705,	757,	741,
Cape and Natal	776,	968,	731,	487,	614,	493,
Brit. W. Co. of Af., Ascension and St. Helena	105,	238,	322,	133,	80,	193,
Mauritius	603,	171,	185,	111,	300,	134,
Channel Islands	114,	178,	96,	208,	93,	181,
Total—British Possessions	18,439,	10,954,	13,226,	8,915,	8,738,	10,068,
General Total£	88,146,	57,884,	75,813,	47,719,	56,762,	45,679,

* i.e., British and Irish produce and manufactures.

Trade of United Kingdom, 1870-66.—*Computed Real Value of the Total Exports of Foreign and Colonial Produce and Manufactures to each Foreign Country and British Possession.*

Merchandise Exported to the following Foreign Countries, &c. [000's omitted.]	1870.	1869.	1868.	1867.	1866.
I.—FOREIGN COUNTRIES.	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark, & Iceland, & Heligoland	4,597,	4,382,	4,054,	4,550,	4,993,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland and Belgium....	18,200,	20,762,	21,082,	19,410,	19,130,
Western Europe; viz., France, Portugal, (with Azores, Madeira, &c.), and Spain, (with Gibraltar and Canaries)	11,351,	12,838,	13,854,	12,048,	16,465,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	1,624,	1,623,	1,329,	1,353,	1,417,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	573,	502,	459,	520,	305,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	45,	51,	36,	48,	46,
Western Africa	247,	208,	210,	187,	154,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	—	—	—	—	—
Indian Seas, Siam, Sumatra, Java, Philip- pines; other Islands	19,	36,	46,	58,	17,
South Sea Islands	—	—	—	—	—
China, including Hong Kong	554,	420,	335,	350,	316,
United States of America	2,971,	2,163,	2,370,	2,294,	3,344,
Mexico and Central America	167,	67,	57,	87,	61,
Foreign West Indies and Hayti	327,	131,	307,	143,	203,
South America (Northern), New Granada, Venezuela and Ecuador	71,	46,	100,	83,	52,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	185,	258,	220,	120,	64,
„ (Atlantic), Brazil, Uruguay, and Buenos Ayres	287,	103,	113,	244,	200,
Other countries (unenumerated)	65,	39,	24,	37,	35,
Total—Foreign Countries	41,283,	43,629,	44,596,	41,532,	46,801,
II.—BRITISH POSSESSIONS:					
British India, Ceylon, and Singapore	909,	1,073,	1,141,	1,134,	761,
Austral. Cols.—New South Wales and Vic- toria, So. Aus., W. Aus., Tasm., and N. Zea.	837,	970,	987,	744,	978,
British North America	800,	751,	723,	867,	867,
„ W. Indies with Btsh. Guiana & Honduras	293,	321,	324,	243,	249,
Cape and Natal	104,	70,	69,	74,	61,
Br. W. Co. of Af., Ascension and St. Helena	72,	80,	84,	94,	83,
Mauritius	17,	18,	21,	7,	14,
Channel Islands	158,	138,	141,	135,	147,
Other possessions	21,	11,	15,	11,	17,
Total—British Possessions	3,211,	3,432,	3,505,	3,309,	3,187,
General Total£	44,494,	47,061,	48,101,	44,841,	49,988,

IMPORTS. — (United Kingdom.) — **First Five Months** (*January — May*), **1872-71-70-69-68.**—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Five Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
RAW MATLS.— <i>Textile, &c.</i>	Cotton Wool	30,457,	30,080,	26,328,	21,969,	25,515,
	Wool (Sheep's) ..	11,087,	8,857,	7,942,	6,579,	4,014,
	Silk*	5,520,	5,892,	8,583,	6,252,	6,499,
	Flax	1,696,	1,207,	1,397,	1,212,	1,189,
	Hemp	2,938,	2,756,	1,684,	1,597,	1,098,
	Indigo	2,174,	1,806,	1,122,	1,537,	819,
		53,872,	50,598,	47,056,	39,146,	39,134,
" " <i>Various.</i>	Hides	2,558,	1,581,	1,166,	892,	819,
	Oils	1,856,	1,945,	1,372,	1,376,	1,446,
	Metals	5,139,	3,772,	1,585,	1,544,	1,489,
	Tallow	1,288,	1,225,	927,	635,	442,
	Timber	2,547,	2,145,	1,162,	1,183,	1,140,
		13,389,	10,668,	6,212,	5,630,	5,336,
" " <i>Agretil.</i>	Guano	315,	1,311,	1,092,	335,	907,
	Seeds	3,198,	2,955,	732,	1,023,	1,113,
		3,513,	4,266,	1,824,	1,358,	2,020,
TROPICAL, &c., PRODUCE.	Tea	5,186,	5,142,	4,910,	4,398,	4,737,
	Coffee	1,618,	1,724,	1,127,	1,414,	1,488,
	Sugar & Molasses	7,324,	7,201,	6,775,	5,026,	5,321,
	Tobacco	954,	1,216,	544,	444,	666,
	Rice	860,	475,	264,	873,	639,
	Fruits	992,	788,	519,	640,	624,
	Wines	3,295,	2,966,	2,084,	2,464,	2,389,
	Spirits	1,010,	1,643,	1,137,	986,	862,
		21,239,	21,155,	17,359,	16,245,	16,726,
FOOD	Grain and Meal.	15,601,	12,876,	11,799,	11,979,	1,7370,
	Provisions	8,320,	7,256,	5,654,	5,399,	4,648,
		23,921,	20,132,	17,453,	17,378,	22,018,
Remainder of Enumerated Articles		15,092,	13,258,	5,986,	6,920,	4,933,
TOTAL ENUMERATED IMPORTS		131,026,	120,077,	95,890,	86,677,	90,167,
Add for UNENUMERATED IMPORTS (say)		10,900,	9,425,	23,972,	21,669,	22,542,
TOTAL IMPORTS		141,926,	129,502,	119,862,	108,346,	112,709,

* "Silk," inclusive of manufactured silk, "not made up."

EXPORTS. — (United Kingdom.) — **First Six Months (January — June), 1872-71-70-69-68.**—*Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.*

(First Six Months.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
MANFRS.—Textile. Cotton Manufactures..		30,207,	27,299,	27,391,	25,855,	24,322,
	„ Yarn	7,992,	7,092,	7,306,	6,996,	7,664,
Woollen Manufactures		15,986,	12,066,	10,760,	10,840,	8,571,
	„ Yarn	3,403,	2,930,	2,740,	2,771,	3,423,
Silk Manufactures.....		1,137,	976,	1,203,	1,051,	1,051,
	„ Yarn	747,	634,	106,	94,	99,
Linen Manufactures ...		4,305,	3,589,	3,670,	3,473,	3,354,
	„ Yarn	1,042,	1,149,	1,298,	1,131,	1,213,
		64,819,	55,735,	54,474,	52,211,	49,697,
„ Sewed. Apparel		1,416,	1,300,	940,	1,148,	992,
	Haberdy. and Millnry.	3,159,	2,767,	2,252,	2,229,	2,102,
		4,575,	4,067,	3,192,	3,377,	3,094,
METALS, &c. Hardware		2,331,	1,716,	2,175,	2,027,	1,760,
	Machinery	3,512,	2,407,	2,647,	2,278,	2,004,
	Iron	16,007,	11,779,	10,651,	9,053,	6,918,
	Copper and Brass.....	1,760,	1,402,	1,771,	1,545,	1,577,
	Lead and Tin	883,	760,	2,373,	2,336,	1,939,
	Coals and Culm	3,970,	2,736,	2,616,	2,298,	2,586,
		28,463,	20,800,	22,233,	19,537,	16,784,
Ceramic Manufcts. Earthenware and Glass		1,454,	1,219,	1,285,	1,316,	1,197,
Indigenous Mnfrs. and Products. Beer and Ale.....		1,178,	1,045,	1,111,	1,044,	1,053,
	Butter	143,	149,	138,	135,	121,
	Cheese	37,	48,	51,	45,	53,
	Candles	112,	87,	56,	88,	110,
	Salt.....	217,	232,	187,	201,	246,
	Spirits	98,	101,	94,	97,	85,
	Soda	1,146,	793,	700,	666,	754,
		2,931,	2,455,	2,337,	2,276,	2,422,
Various Manufcts. Books, Printed		368,	296,	278,	304,	308,
	Furniture	—	—	96,	100,	82,
	Leather Manufactures	1,764,	1,968,	1,218,	1,250,	1,123,
	Soap	149,	99,	105,	100,	126,
	Plate and Watches ...	81,	104,	219,	234,	160,
	Stationery	290,	221,	235,	221,	188,
		2,652,	2,688,	2,151,	2,209,	1,987,
Remainder of Enumerated Articles		7,660,	8,354,	6,291,	5,854,	4,973,
Unenumerated Articles.....		7,049,	6,319,	5,146,	4,705,	4,447,
TOTAL EXPORTS.....		119,603,	101,637,	97,109,	91,485,	84,601,

SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Six Months ended June, 1872, as compared with Corresponding Months of Years 1871 and 1870.

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1872.		1871.		1870.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
FOREIGN COUNTRIES.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Russia { Northern ports	202,426	286,788	175,951	339,439	145,898	312,024
{ Southern „	298,437	122,691	265,071	125,283	217,673	102,690
Sweden	339,877	214,366	276,083	177,405	255,151	147,591
Norway	416,761	120,423	402,809	113,781	366,595	127,392
Denmark	93,155	227,931	65,972	243,114	87,690	215,485
Germany	726,754	1,116,342	683,393	1,111,024	583,622	907,355
Holland	397,845	504,821	332,770	438,853	329,324	362,241
Belgium	390,877	377,523	331,938	372,385	290,464	302,428
France	801,570	1,256,412	554,381	1,191,379	659,817	1,302,143
Spain	402,381	293,561	316,258	256,487	265,856	289,523
Portugal	138,780	127,553	140,934	101,961	145,645	124,963
Italy	126,677	370,230	113,032	323,748	99,849	270,053
Austrian territories	18,748	99,409	40,075	75,630	45,747	82,820
Greece	52,121	32,429	26,147	29,348	*	*
Turkey (including Walla- chia and Moldavia)	112,868	200,725	125,833	183,983	177,655	144,437
Egypt	255,426	227,776	178,461	252,536	192,252	225,473
United States of America ...	1,245,304	1,146,968	1,399,270	1,222,749	1,023,313	934,616
Mexico, Foreign West Indies, and Central America	123,547	203,880	93,378	187,788	178,247	190,153
Brazil	147,099	186,266	109,102	173,332	107,164	160,511
Peru	81,929	118,269	121,033	86,880	157,094	122,586
Chili	47,074	93,760	30,204	63,574		
China	55,075	43,759	52,981	38,745	*	*
Other countries	248,553	292,253	189,423	256,964	270,227	414,184
<i>Total, Foreign Countries</i>	6,723,284	7,664,135	6,024,489	7,366,388	5,599,283	6,738,668
BRITISH POSSESSIONS.						
North American Colonies ...	118,174	402,009	188,955	373,080	166,394	410,269
East Indies, including Ceylon, Singapore, and Mauritius	506,380	533,075	362,633	505,009	340,502	465,003
Australia and New Zealand	141,461	168,339	130,753	136,111	124,822	147,688
West Indies	104,495	94,802	119,948	109,562	97,638	86,369
Channel Islands	125,055	90,421	118,293	84,635	†	†
Other possessions	93,604	409,159	93,140	295,548	234,420	355,593
<i>Total, British Possessions</i>	1,089,169	1,697,805	1,013,722	1,503,945	963,776	1,455,922
TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.						
Six months ended June { 1872.....	7,812,453	9,361,940	—	—	—	—
{ '71.....	—	—	7,038,211	8,870,333	—	—
{ '70.....	—	—	—	—	6,563,059	8,194,590

* Included in "Other countries."

† Included in "Other possessions."

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—Computed Real Value for the Six Months (January—June), 1872-71-70.

[000's omitted.]

(First Six Months.)	1872.		1871.		1870.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	3,056,	14,	3,419,	9,	3,115,	4,
So. Amca. and W. } Indies	420,	1,211,	708,	1,686,	848,	1,742,
United States and } Cal.	3,798,	2,061,	4,451,	3,145,	793,	922,
	7,274,	3,286,	8,578,	4,840,	4,756,	2,668,
France.....	134,	271,	128,	33,	52,	358,
Germany, Holl. & } Belg.	399,	1,856,	1,314,	330,	2,	6,
Prtgl., Spain, and } Gbrltr.....	25,	23,	33,	22,	20,	53,
Mlta., Trky., and } Egypt	56,	28,	129,	63,	76,	9,
China	—	60,	2,	2,028,	—	11,
West Coast of Africa	43,	—	71,	—	51,	1,
All other Countries....	176,	53,	772,	1,372,	263,	281,
<i>Totals Imported...</i>	8,107,	5,577,	11,027,	8,688,	5,220,	3,387,
Exported to:—						
France.....	249,	605,	945,	100,	1,586,	413,
Germany, Holl. & } Belg.	1,925,	324,	3,032,	3,447,	56,	794,
Prtgl., Spain, and } Gbrltr.....	960,	182,	178,	398,	—	2,
	3,134,	1,111,	4,156,	3,945,	1,642,	1,209,
Ind. and China (viâ } Egypt).....	754,	3,963,	436,	1,057,	277,	1,622,
Danish West Indies	—	—	—	—	—	—
United States	—	—	2,	1,	70,	22,
South Africa	879,	72,	216,	1,	51,	—
Mauritius	—	—	—	—	—	—
Brazil	262,	—	206,	—	73,	—
All other Countries....	3,724,	851,	363,	278,	344,	260,
<i>Totals Exported...</i>	8,753,	5,997,	5,379,	5,282,	2,457,	3,113,
<i>Excess of Imports...</i>	—	—	5,648,	3,406,	2,763,	274,
„ Exports	646,	420,	—	—	—	—

REVENUE.—(UNITED KINGDOM.)—30TH JUNE, 1872-71-70-69.

Net Produce in YEARS and QUARTERS ended 30th JUNE, 1872-71-70-69.

[000's omitted.]

QUARTERS, ended 30th June.	1872.	1871.	1872.		Corresponding Quarters.	
			Less.	More.	1870.	1869.
	£	£	£	£	£	£
Customs	4,944,	4,731,	—	213,	5,033,	5,515,
Excise	6,097,	5,462,	—	635,	5,266,	4,971,
Stamps	2,525,	2,377,	—	148,	2,262,	2,486,
Taxes	349,	284,	—	65,	699,	1,430,
Post Office	1,200,	1,130,	—	70,	1,170,	1,120,
Telegraph Service	225,	170,	—	55,	140,	—
Property Tax	15,340,	14,154,	—	1,186,	14,570,	15,522,
	1,604,	867,	—	—	890,	2,489,
Crown Lands	16,944,	15,021,	—	1,186,	15,460,	18,011,
	75,	75,	—	—	75,	74,
Miscellaneous	1,374,	1,740,	365,	—	773,	762,
Totals	18,393,	16,836,	365,	1,186,	16,308,	18,847,
			NET INCR. £1,557,724			

YEARS, ended 30th June.	1872.	1871.	1872.		Corresponding Years.	
			Less.	More.	1870.	1869.
	£	£	£	£	£	£
Customs	20,539,	19,889,	—	650,	21,047,	22,486,
Excise	23,961,	22,984,	—	977,	22,058,	20,576,
Stamps	9,920,	9,122,	—	798,	9,024,	9,332,
Taxes	2,395,	2,310,	—	85,	3,769,	3,448,
Post Office	4,750,	4,730,	—	20,	4,720,	4,660,
Telegraph Service	810,	530,	—	280,	240,	—
Property Tax	62,375,	59,565,	—	2,810,	60,858,	60,502,
	9,821,	6,327,	—	3,494,	8,445,	8,838,
Crown Lands	72,196,	65,892,	—	6,304,	69,303,	69,340,
	375,	385,	10,	—	376,	361,
Miscellaneous	3,695,	4,195,	500,	—	3,216,	3,454,
Totals	76,266,	70,472,	510,	6,304,	72,895,	73,155,
			NET INCR. £5,793,629			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH JUNE, 1872:—

An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 30th June, 1872; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 30th of June, 1872, in respect of such Charges.

Received:—

	£
Surplus balance in the Exchequer on the 31st of March, 1872, beyond the amount of the Charge on the Consolidated Fund, on that date, as per last account	2,503,241
Income received, as shown in Account I	18,393,507
Amount received in Repayment of Advances for Public Works, &c. ...	493,507
	<u>£21,390,255</u>

Paid:—

	£
Amount applied out of the Income to <i>Supply Services</i>	11,183,763
Charge of the <i>Consolidated Fund</i> on the 30th of June, 1872, viz.:—	
Interest of the Permanent Debt	£6,093,073
Terminable Annuities	254,018
Principal of Exchequer Bills	179,500
Interest of „ „	39,390
The Civil List	101,709
Other Charges on Consolidated Fund	300,048
Advances for Public Works, &c.	573,281
Sinking Fund	712,074
	<u>8,253,093</u>
Total	19,436,856

Surplus balance in the Exchequer on the 30th of June, 1872, beyond the amount of the charge on the Consolidated Fund on that date, payable in September quarter, 1872, viz.:—

Surplus over Charge in Ireland	£2,163,951
Excess of Charge in Great Britain	210,552
	<u></u>
Net surplus	*1,953,399
Total	<u>£21,390,255</u>

* Charge on 30th of June, 1872 (as above)	£8,253,093
Paid out of growing produce in June Quarter, 1872.....	924,368
	<u></u>
Portion of the Charge payable in September Quarter, 1872 ...	7,328,725
To meet which there was in the Exchequer on the 30th of June, 1872	9,282,124
	<u></u>
Surplus balance as above	<u>1,953,399</u>

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),
Second Quarter of 1872.**

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1872.		Weekly Average. (Per Impl. Quarter.)					
		Wheat.		Barley.		Oats.	
		s.	d.	s.	d.	s.	d.
April	6	54	—	35	11	22	3
"	13	53	11	36	6	21	8
"	20	54	5	36	5	22	8
"	27	54	6	36	4	22	8
Average for April.....		54	2	36	3	22	3
May	4	55	1	37	1	23	5
"	11	56	—	36	7	22	10
"	18	56	4	35	8	24	—
"	25	57	9	35	5	23	8
Average for May		56	3	36	2	23	5
June	1	58	11	35	5	23	4
"	8	59	1	35	10	22	11
"	15	58	8	34	10	23	4
"	22	59	—	33	3	24	2
"	29	59	2	33	9	23	3
Average for June		58	11	34	7	23	4
Average for the quarter		56	8	35	7	23	1

RAILWAYS.—PRICES, April—June;—and TRAFFIC, January—June, 1872.

[Abstract from "Herapath's Journal" and the "Times."]

Total Capital Ex- pended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. 26 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 26 Weeks.		Dividends per Cent. for Half Years.					
		1st June.	3rd May.	1st April.	'72.	'71.	'72.	'71.	'72.	'71.	Dec., '71.	June, '71.	Dec., '70.			
£					No.	No.	£	£	£	£	s.	d.	s.	d.	s.	d.
56,3	Lond. & N. Westn.	154	150	154¼	1,516	1,507	3,715,	3,498,	95	87	87	6	67	6	72	6
46,9	Great Western	115	110¼	112½	1,386	1,386	2,344,	2,218,	65	62	53	9	45	—	37	6
19,9	„ Northern...	142½	137½	138	512	491	1,176,	1,079,	89	85	87	6	55	—	82	6
27,6	„ Eastern	53½	52¼	53	751	748	1,038,	988,	53	51	25	—	Nil	—	17	6
17,8	Brighton	82¾	82½	84½	376	370	650,	602,	66	62	42	6	7	6	15	—
18,9	South-Eastern	103¼	103	98¾	346	346	739,	697,	82	78	60	—	26	3	40	—
17,6	„ Western....	110	107	109	574	560	—	—	—	—	62	6	47	6	57	6
205,0		109	106½	107	5,461	5,408	—	—	—	—	59	9	41	6	46	6
40,7	Midland	151¼	146¼	144¼	863	848	2,214,	1,962,	99	88	75	—	65	—	67	6
24,3	Lancsh. and York.	160½	156½	158½	428	428	1,489,	1,396,	134	125	80	—	77	6	70	—
13,8	Sheffield and Man.	77½	75½	78	254	254	656,	590,	99	91	40	—	15	—	25	—
43,7	North-Eastern	173½	170	174½	1,325	1,309	2,176,	2,303,	63	68	100	—	82	6	85	—
112,5		141¾	137¼	139¼	2,870	2,839	6,535,	6,251,	88	84	73	9	60	—	61	9
23,2	Caledonian	116½	114¼	119	704	704	1,180,	1,099,	65	58	57	6	47	6	42	6
6,4	Gt. S. & Wn. Irlnd.	116	115	118	445	445	—	—	—	—	55	—	50	—	50	—
347,1	Gen. aver.	120	117	119	9,480	9,396	—	—	—	—	63	7	45	1	51	—

Consols.—Money Prices, 1st June, 93 $\frac{3}{8}$.—3rd May, 93 $\frac{1}{8}$.—1st April, 93.

Exchequer Bills.—1st June, 2s. dis. to 2s. pm.—3rd May, 2s. to 7s. pm.—1st April, —.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the SECOND QUARTER (April—June) of 1872.

[0.000's omitted.]

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES. (Wednesdays.)	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.		Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlms.	1872.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	1871. Per ann. 30 Nov. 3½ p.ct. 1872. 11 Apr. 4 ,,
36,76	April 3	11,01	3,98	21,76	26,02	1872. 11 Apr. 4 ,,
35,83	„ 10	11,01	3,98	20,83	26,01	
35,93	„ 17	11,01	3,98	20,93	25,82	
36,08	„ 24	11,01	3,98	21,08	25,49	
35,98	May 1	11,01	3,98	20,98	25,92	8 May 5 ,,
35,33	„ 8	11,01	3,98	20,33	25,86	
35,06	„ 15	11,01	3,98	20,06	25,74	
35,13	„ 22	11,01	3,98	20,13	25,49	
35,63	„ 29	11,01	3,98	20,63	25,91	29 ,, 4 ,,
36,61	June 5	11,01	3,98	21,61	25,35	13 Jun. 3½ ,, 20 ,, 3 ,,
37,10	„ 12	11,01	3,98	22,10	24,86	
37,88	„ 19	11,01	3,98	22,88	24,90	
38,96	„ 26	11,01	3,98	23,96	25,21	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabili- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	1872.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.
14,55	3,74	12,71	19,23	,37	April 3	13,31	25,96	10,74	,60	50,61
14,55	3,15	9,25	22,32	,40	„ 10	13,30	25,89	9,82	,67	49,68
14,55	3,16	9,06	21,04	,41	„ 17	13,30	24,10	10,11	,71	48,23
14,55	3,17	9,53	19,46	,38	„ 24	13,31	22,25	10,59	,67	47,09
14,55	3,16	9,94	19,25	,38	May 1	13,31	23,35	10,06	,57	47,29
14,55	3,18	10,18	19,49	,36	„ 8	13,31	24,54	9,47	,50	47,78
14,55	3,19	9,87	18,78	,38	„ 15	13,31	23,50	9,32	,64	46,77
14,55	3,20	10,26	17,24	,35	„ 22	13,31	22,03	9,64	,62	45,61
14,55	3,16	10,53	17,75	,34	„ 29	13,31	21,55	10,72	,75	46,33
14,55	3,15	11,09	17,70	,37	June 5	13,31	21,59	11,26	,71	46,88
14,55	3,16	11,76	16,57	,33	„ 12	13,31	20,10	12,24	,72	46,38
14,55	3,16	12,21	16,52	,32	„ 19	13,31	19,86	12,98	,70	46,77
14,55	3,17	13,67	17,35	,36	„ 26	13,50	21,27	13,75	,59	49,11

LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the SECOND QUARTER (April—June) of 1872; and in SCOTLAND and IRELAND, at the Three Dates, as under.

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. <i>Saturday.</i>	<i>London:</i> Cleared in each Week ended <i>Wednesday.*</i>	Private Banks. (Fixed Issues, 3,95).	Joint Stock Banks. (Fixed Issues, 2,74).	TOTAL. (Fixed Issues, 6,69).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1872.	£	£	£	£	1872.	£	£	£	£	£	£
April 6	86,70	2,83	2,52	5,35	April 20	1,69	3,23	4,94	4,28	3,51	7,79
„ 13	106,55	2,81	2,51	5,32							
„ 20	139,06	2,77	2,48	5,25							
„ 27	95,56	3,08	2,48	5,56							
May 4	137,74	2,80	2,48	5,28	May 18	1,95	3,41	5,36	4,36	3,43	7,79
„ 11	101,39	2,80	2,48	5,28							
„ 18	129,62	2,77	2,45	5,22							
„ 25	98,62	2,73	2,41	5,14							
June 1	85,52	2,68	2,37	5,05	June 15	2,09	3,63	5,72	4,23	3,31	7,54
„ 8	139,43	2,65	2,34	4,99							
„ 15	91,54	2,61	2,31	4,92							
„ 22	130,99	2,59	2,32	4,91							
„ 29	89,45	2,63	2,34	4,97							

* The Wednesdays preceding the Saturdays.

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.*

1	2	3	4	5 6		7	8	9
DATES.	London on Paris. 3 m. d.	London on Hamburg. 3 m. d.	New York. 60 d. s.	Calcutta.		Hong Kong. 6 m. s.	Sydney. 30 d. s.	Standard Silver in bars in London. pr. oz.
				India Council. 60 d. s.	At Calcutta on London. 6 m. d.			
1872.			per. cent.	d.	d.	d.	per. cent.	d.
April 13	25.72½	13.10½	109½	23½	24	—	—	60¾
„ 27 .....	.70	.11½	„ 5/8	„ 1/8	23 9/16	—	—	„ 3/8
May 4	„	„	—	22¾	—	—	—	„ 1/8
„ 18 .....	.77½	„ 3/4	109 5/8	„ 9/16	23	—	—	„ 1/4
June 1 .....	.77	„	„	„ 5/8	„ 1/16	53 1/8	3/4 pm.	„ 1/8
„ 15 .....	.80	.11½	„	„ 1/16	„ 5/16	54 3/8	„	„ 1/16

JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1872.

INAUGURAL ADDRESS *delivered at the* SOCIETY'S ROOMS, 12, *St. James's Square, London, on* TUESDAY, 19th November, 1872. *By the* PRESIDENT, WILLIAM FARR, ESQ., M.D., D.C.L., F.R.S.

Gentlemen,

It is gratifying to be able to state that the prospects before us are cheering. Statistics—that is the science of States—the science of men living in political communities, was never in such demand as it is in the present day; and the supply promises to be equal to the demand. Politics is no longer the art of Letting things alone, nor the game of audacious Revolution for the sake of change; so politics, like war, has to submit to the spirit of the age, and to call in the aid of science: for the art of government can only be practised with success when it is grounded on a knowledge of the people governed, derived from exact observation.

I need not remind you that statistics taking its stand on observed facts—statistical or dynamical—determines the laws of their relation; and that its traces flow through our history ever since the days of Alfred the Great. No nation can boast of such a statistical monument as the “Domesday Book;” a record of the first importance as it is, coming down from the eleventh century, replete with facts concerning property and persons in a statistical form. The commercial statistics, and the records of prices as Professor Rogers has shown, descend to us from early times. The London bills of mortality, dating from the end of Elizabeth’s reign, and continued to the present year, throwing a flood of light on the development of a great city and on the laws of population, have no parallel in any other country. Graunt, Petty, Davenant, and Gregory King laid the foundation of political arithmetic;* and the illustrious Halley by his table showed that the generations of men, like the heavenly bodies, have prescribed orbits, which analysis can trace. This table—beautiful in its simplicity, extensive in its applications—is a fundamental fact in statistics; it was discovered, and it has been elaborated up to its present form in England, by Price, Milne, Davis,

* The name “statistics,” and not the thing signified, had its origin in Germany. *Politics* is the correct classic word.

De Morgan, and others. Adam Smith's great work is a mine of statistics ; it opened a new field of useful applications.

In the exact periodical enumeration of the population according to sex and age, the Swedes preceded all other nations ; the census there was taken in the middle of the last century, and since that date with the other natural sciences, the systematic observation of statistical facts has extended over Europe. Every Government has contributed materials to the vast edifice in which we are labouring, some more and some less, some precious and some worthless, according to the measure of their intelligence and capacity. Yet after all that has been done by Governments and by individuals, in England and in the nations most advanced in civilisation, such great deficiencies still exist, both in the data and in the area over which they are collected, that every statist is impressed with the necessity of making new and strenuous efforts. To one of these efforts I may refer. At the London Exhibition of 1851, the idea occurred to some minds that it might be well to convene an International Statistical Congress, where all nations should be represented by delegates of their Governments as well as by their Statists, and statistics be discussed, with a view to determine, without limiting the range of inquiry, what facts capable of numerical expression should be observed by all ; what measuring units should be employed ; and generally what the forms of tabulation and analysis should be. The first Congress met at Brussels, in the reign of Leopold, under the presidency of M. Quetelet ; the last Congress has, by invitation of the Emperor Alexander II, met at Petersburg, in the present year. This Congress is the most important event that has occurred since we last assembled ; and though a detailed account of it will be given by one of your delegates this evening, I think it right to refer to a few of its essential features. You appreciated the importance of the Congress, and the Council nominated delegates to represent the Society. The distance was great ; the journey was attended with expense ; and there was some danger, as alarming accounts of cholera prevailed when the season for departure drew near. But this did not deter them ; and nine fulfilled the mission with which you charged them, and took an active part in the business.*

They worthily represented the Statistical Society of London, the greatest in Europe, and I beg leave to thank them in your name. It was particularly gratifying to us to be joined there by Mr. Heron, M.P., the vice-president of our sister society in Dublin, and to find ourselves co-operating in the most friendly manner with

* Samuel Brown, H. Chubb, W. Farr, J. T. Hammick, Archibald Hamilton, F. Hendricks, Leone Levi, F. J. Mouat, and W. Tayler, were the delegates of the Society.

our brethren of the United States of America. The only regret we felt was that we had not the assistance of associated delegates from India, and from our great flourishing colonies ; but this wrong may be remedied at the next Congress.

The Congress is a body somewhat complex in its organisation : there was a preliminary Congress of official delegates, of which M. Semenow was the able president ; then Five Sections met, consisting of all inscribed members, who reported finally the results of their labours to the meetings of the General Assembly opened by the president, His Imperial Highness the Grand Duke Constantine, in the Great Hall of the Nobles of the Province of St. Petersburg. The Congress has from the first had for its special object the settlement of questions of science, but wherever it has been held it has had the effect collaterally of awakening the attention of Governments and of the people to a sense of the importance of statistics, and of what M. Quetelet has so expressively called "social physics." In this direction the Congress of Petersburg was a great success : reckoning Germany as one, twenty-three States sent, besides forty-four official delegates, eighty-four other representatives ; Russia supplied in the brother of the Emperor and the President of the Council of the Empire one of the ablest and most assiduous presidents the Congress has ever had. His Imperial Highness opened and closed the General Assembly in encouraging addresses ; he attended constantly, notwithstanding his many duties, the meetings of the General Assembly, and followed the discussions. The eighty members of the Organisation Commission, having Prince Lobanow, General Greigh a Scotch historical name, and Director Semenow at its head, did its work admirably ; the Russian members consisting of eminent officers of the Crown, professors, members of the learned professions, from different parts of the empire, numbered 511. The *inscribed* members of the Congress, including 67 foreign *adherents* absent, amounted to 706, and filled the Hall of Nobles, without counting ladies and other spectators in the galleries. In point of numbers this Congress surpassed all others, except that of Italy, where the sciences have permeated all the great cities, and the civilisation of 2,000 years still flows in the blood of the nation.

The census and the registration of births, deaths, and marriages were re-discussed with advantage, and, to meet the innumerable varieties of life in different countries, various modifications and improvements were suggested. One of the most important measures that was unanimously recommended was a novelty to us, but is in successful operation in at least three States—Sweden, Holland, and Belgium. Its object is to establish and uphold a perpetual register of the population in each township. This register embraces the particulars that are recorded at the census,

is kept posted up, and is every year revised. In country places where the population is stationary in Sweden it is the census enumeration book; but in the city of Stockholm, with a very mobile population, the enumeration is made as in England. Under our present system there may be four or more separate records relating to the same individual, in so many different books, for he may be registered (1) in the birth register, (2) in the marriage register, (3) in the census enumeration books many times, and (4) finally in the death register. Now it would be exceedingly convenient if all the facts respecting a man were in one book, and were recorded in connection (by reference) with his children's and his parents' registers. Then, at death, his children and he could be traced back to his marriage, to his birth, and to his ancestors. This, under the existing system, or under any system, of transmission of property, is of essential importance; how much evil it would prevent cannot be calculated; but I believe the expense of such registration, which is quite practicable, would be covered by legal and other economies. Several problems of the highest interest to our race could be solved by the collation of facts in such a form. The population register the Congress has passed I recommend to your especial attention in the forthcoming report. Industrial statistics, after commercial and agricultural statistics, are now the great want of the age, and they formed a special subject of discussion. A good classification, drawn up by Professor Andréiew, was discussed in a Subsection, and there, after some amendments, approved; but the Congress, fully recognising its merits, let it stand over for further criticism at the Vienna Exhibition, and at a future meeting. For the classification of the people according to their professions, important as it is, no time was left. In the meantime the English classification, which was submitted to the members with all its improvements, will be exemplified in this kingdom and will be tested by its results.

The Congress has endeavoured this time to maintain the continuity of its labours through a permanent commission with M. Semenow for its first president. The members consist of delegates, who, at the instance of M. Quetelet and M. Engel, engaged to produce a series of international statistical works, some of which have been begun.

You are aware that the Congress has invariably decided, without one dissentient voice, in favour of the metric measures and metric weights as the units to be employed in international statistics: but no understanding has yet been come to as to money units. There has been generally a leaning to the franc; but this unit I and others have always opposed, on the grounds that it and its centime are small units of insufficient magnitude to measure the large values with which the world now deals. The franc suited the

French peasant of the day, but to propose it as the universal money unit now is an anachronism. The sovereign or the shilling has many advantages over the franc; and the new German gold coin, with its 20 marks, is in close though not absolute accord with our English system. But it would be difficult to induce the nations to accept the sovereign as the supreme and universal unit: fortunately for us, the sovereign, by the slightest adjustment of the alloy, will weigh exactly 8 grams—a gram of such gold being worth half-a-crown—while a 10-gram piece will make a coin (say a *Victoria*) worth 10 such half-crowns (=25 shillings); which being directly derived from the metric system, will harmonise admirably with it in the measurement of quantities. Upon this basis we shall have a decimalised money of account; for, calling the gram a *solidus*, or *sol*, our old Saxon shilling nearly, its division into 100 cents, with the *Victoria*, will supply all the units required.*

Some understanding it is necessary to come to in statistics as to the measuring unit of value, for, in consequence of the continual extension of inconvertible paper money, all the statements we read of values are deranged. Inconvertible paper money is a mirage: the American dollar, the Austrian florin, the Spanish escudo, the Russian rouble, the Italian lira, are paper units, necessarily fluctuating in value with the demand and with the quantities emitted; and now the franc, on which some people have been inclined to lean, has sunk into inconvertible paper, slightly depreciated, and is subject to all the caprices of the issuing department of the Government. On this ground it cannot be accepted as a scientific measure. Of the ability of M. Thiers, and of the financial good faith of France, no one doubts; but this power of paying in paper of no intrinsic value is always fatal in the end, and if the franc survive the trials ahead, it will be an exception to the rule. Statistics is a science; and it suffers as much as credit, commerce, industry, morality, from the prevailing floods of paper money. So I see no chance of an approach to scientific accuracy unless the values now expressed in current paper money be converted into value, expressed in gold units. To this opinion I count confidently upon your assent.

In taking the Census the facts have, in England, since 1841, been entered in Family Schedules, which are copied by the enumerators in books, from which the abstracts are made at the Central Office. In Italy I believe first, and recently in Prussia, the Census has been taken by individual schedules—*bulletins individuels*. The particulars

* One *Victoria* = 10 grams of standard gold = 10 half-crowns (*sols*) of silver; and 1 *sol* = 100 cents. The current threepenny piece, the old Saxon penny, will be 10 cents, the 6*d.* = 20 cents; the shilling 40 cents; 5 such cents will = 6 farthings; and these cents will conveniently replace the $\frac{1}{4}$ *d.*, $\frac{1}{2}$ *d.*, and 1*d.*

respecting each person are entered on cards, and all the classifications are made by dealing out these cards in packs. This work I had an opportunity of seeing at Moscow, where the population (610,000) has recently been enumerated, and in Berlin: the new method will thus be fairly tested. Of course, on the English plan, the abstracts might be made from the original householders' schedules, and the expense of copying and any chances of error, by that means, be obviated. Upon the whole it was decided, after discussion, to adhere to the tried plan of the Census Book, which presents in a compact and complete list, besides the names, all the other particulars about each person. The task of abstracting is thus much facilitated. I may give one example. A table shows the ages of males and females, distinguished under categories of age; the ages of children returned as scholars, and not scholars, as well as the ages of all bachelors and spinsters. It shows, besides, with the ages of the husbands the ages of their wives. The table consists of 722 compartments for receiving ticks. From a statement on the table you will see that in Craig's Court the average rate of very accurate work, in one room, ranges from 1,231 by the most, to 704 by the least expert hand, averaging in the aggregate 1,007 persons classified per hour. We shall see if this rate can be exceeded by the cards. I do not think it; and in the cards the family arrangement, once broken up, can with difficulty be restored. The mechanics of statistics form too important an element in practice to be overlooked.*

* I have been furnished with the following statement by Mr. F. J. Williams, the chief clerk of the Census Office, showing the average number of the population abstracted by each clerk per hour (1) in relation to the "age and conjugal condition" of the people, and (2) in relation to the "ages and occupations" of the people.

1. Eleven clerks were employed four weeks abstracting "*ages and conjugal condition*" of the population.

During that time they abstracted 1,590,877 population in 1,580 hours, or at the average rate of 1,007 per hour. The daily average number of hours the eleven clerks worked was six and a-half; they therefore abstracted about 6,545 per day.

One clerk who worked 156 hours and abstracted 193,077 population during the four weeks, attained an average *maximum* rate of 1,231 per hour. The daily average number of hours he worked was seven; he therefore abstracted about 8,617 per day.

The average *minimum* number abstracted by one clerk was 86,622 in 123 hours, or at the average rate of 704 per hour. The daily average number of hours he worked was six; he therefore abstracted about 4,224 per day.

2. Nine clerks were engaged four weeks abstracting "*ages and occupations*" of the male population.

During that period they abstracted 680,897 males (representing 1,020,886 male population) having occupations, in 1,366 hours, or on an average 505 (760 population) per hour. The daily average number of hours the nine clerks worked was seven; they therefore abstracted about 3,535 (5,320 population) per day.

One clerk who worked 141 hours and abstracted 83,187 (124,784 population) during the four weeks, attained an average *maximum* rate of 589 (883 population)

I may mention that the *abacus* is still used for calculations in the shops of Moscow; and that additions are made by its use under the intelligent head of the Statistical Department. Our friends will be surprised to hear, perhaps, that in St. Petersburg two young ladies sat with the reporters; while in Moscow young ladies are engaged with the other clerks on the statistical abstracts; it is only an instance of the progressive spirit of the Russians.

Russia, in the reception of the Congress, displayed the hospitality for which her people are famous. The Emperor and the Government left nothing to be desired: the Grand Duchess Helena threw her palace in Petersburg open; fêted the Congress at her palace on the Isles; and received several of the members at Oranienbaum. As great a linguist as her cousin the Queen of Holland, the Grand Duchess is a patron of all the arts; she played the part of Miss Nightingale in the Crimea; and she follows statistics as well as the advanced philosophy of the day up its heights. The book of Helmholtz was on the drawing-room table; and at dinner I had the honour of discussing with her some of the doctrines of the conservation of force—with which she is familiar—in its connection with the consciousness of animals, and the existence of the soul.

Your delegates will bear me out when I say that they were received also with the utmost cordiality by the people; “the municipality of Petersburg, desirous to express its ardent sympathy with the members,” placed apartments at their disposal in the principal hotels: Moscow, “to evince its sympathy and esteem,” invited them to visit that renowned city and its exhibition then open. Your delegates, with a spirit of which you will approve, gave to M. Semenow and to their leading Russian colleagues, a dinner which was attended by the Mayor of Moscow, who, in an eloquent

per hour. The daily average number of hours he worked was six and one-third; he therefore abstracted about 3,730 (5,592 population) per day.

The average *minimum* number abstracted by one clerk was 56,326 (84,494 population) in 145 hours, or at the average rate of 388 (582 population) per hour. The daily average number of hours he worked was six and a-half; he therefore abstracted about 2,522 (3,783 population) per day.

The “age and condition abstracts” represent the entire population, but the “age and occupation abstracts” represent only about two-thirds of the entire population, because children under 15 years of age, whether described as scholars or otherwise, following *no occupation*, are now omitted from the “occupation” abstracts, and have been abstracted on the “age and condition” sheets.

Wives of *no stated occupation*, are omitted from the “occupation” sheet, since the *total wives* are obtainable from the “condition” sheet, and only wives *with occupations* are included in the “occupation” abstract sheet.

Thus, the married women of *no specified occupation*, will be obtained by deducting the numbers on the “occupation” sheet from the total numbers of wives on the “condition” sheet.

The male population abstracted on the condition, and on the occupation sheets, has been compared *at the several ages*, and the numbers have been found to agree very closely.

speech in the Russian tongue, translated by his son, expressed the warmest desire that England, America, and Russia might live united together in friendship. This feeling was responded to by all. It was gratifying to us there to be associated with our American colleagues in giving this dinner of friendship crowning the Session with a signal success, due very much to the good management of the committee,* aided by our valuable associate Mr. Consul Michell of St. Petersburg.

Russia has a vast and noble task before her. The Emperor has emancipated the serfs on equitable conditions; and while this has necessarily deranged some fortunes, it has roused the population into new life, of which we saw many signs. The problem is how to educate the people scattered thinly over a vast, at present illcultured, flat, often ungenerous soil, exposed to some long days of sunshine, followed by long sunless nights: and the difficulty is to find teachers. Even the clergy in many provinces are illiterate. The same physical obstacles offered by a scanty population to the census are met with in a part of America; but in Russia they are enhanced. Still as Russia is animated by a spirit of progress, the true nominal census, which has been very judiciously commenced at the centres of intelligence, in Petersburg, Moscow, and other cities, will extend over the whole empire; the great Asiatic as well as the European provinces. So Asia will be gradually drawn into the domain of science in the north by Russia, while in the south and east she is enlightened and led out of Oriental immobility by England. If China has really an authentic census, as Sir John Bowring believes, it is of little scientific value. But we must not despair; the statistical flag may yet float over that multitudinous empire. Japan, once so exclusive, has grown alive to the value of statistics; envoys have visited the statistical departments here; nine members represented at the Congress those eastern isles so interesting to us, as almost the twins of these isles in the west we inhabit. One of the delegates of Japan, after the dinner, spoke in very energetic terms, and gave as a toast, "The Fraternity of Nations!" Yes; fraternity in science, as well as in trade: this our Society heartily reciprocates with our Japanese colleagues.

In the American Dominion, and in the United States the census has been taken lately, and the results promise to be full of interest. The births, deaths, and marriages are registered systematically only in some States; for in the thinly-peopled parts registration presents difficulties, though none which American energy could not overcome. The State wrong is due to the negligence of many of the legislative bodies, and it cannot be rectified by the action of

* Mr. Tayler, Mr. Hamilton, and Mr. Hammick, acted for England; General Gorham, Mr. Young, and Mr. Barnes represented the United States of America.

Congress, through defects in the American constitution, which time alone can set right. The population has been counted in Chili, Paraguay, and the Argentine Confederation, but generally beyond the southern boundary of the United States, statistics grow quite hazy; and our hopes of progress in the South American continent must depend very much upon the establishment there of forms of settled government. Whether that will be achieved first in Mexico or in Patagonia time will show.

Of Africa statistics knows little or nothing certain, except what we learn from our own colonies at the Cape and on the west coast. Let us hope that Livingstone, Baker, and Sir Bartle Frere may open up that continent to the world; as yet all Africa is for science a great desert. Egypt as well as the African provinces of Turkey are to this day covered with Egyptian darkness; which spreads its gloom over the wide Asiatic, and the fine European provinces of the Turk. He stops the way. Two Egyptian delegates attended at Petersburg; but the Sultan who has taken no census has never been represented at any Congress, except at that of London; and at that of Vienna, by Daoud Effendi, an able Armenian.

The English occupy, fortunately for science, a large portion of the finest parts of the world; and up to a certain point, as we know, they are, like every governing race, statistical. All the colonies have their own census; and some of them are prosecuting inquiries which have not yet been undertaken in England. India, with its numerous and varied races, some of them highly intellectual, is a case apart; and had only an authentic census of some of its provinces until last year. For 1871, as was recommended by us, the almost simultaneous census of the population of the empire will be nearly complete.

The census of Hyderabad, the Punjaub, and Oude, were taken in 1867, 1868, and 1869: of Madras, Mysore, Curg, the Central Provinces, and Post Blair in 1871; of the North-west Provinces, of Bombay including Scinde, of British Burmah and Bengal in the beginning of 1872. The Indian census embraces area, sex, age, education, references to land revenue, caste or religion, and occupation. The enumerated population of Bengal amounts to $66\frac{1}{2}$; the estimate hitherto had been $42\frac{1}{2}$ millions: India has flourished under British rule.

Three systems of Governmental statistics may be conceived: under the first the whole statistics of the nation is wrought out in a single office under one head; under the second, each Government office prepares its own statistics, in its own way, without control or regard to general principles; and under the third, all the offices, while retaining their independent action, through a central repre-

sentative board, act in combination and in harmony. With regard to the first system of centralisation in one office, it has never been more than partially tried; and it would scarcely succeed, for no one head would be equal to the work; inasmuch as statistics deals not with abstractions, but with concrete things represented by units of which a thorough and intimate knowledge is required before those units can be combined so as to show general results, to elicit principles, and to establish laws. Nothing is so easily misunderstood, and so delusive as figures of which the value is not fully set forth; and few tables explain themselves. So I conceive the present system under which each office reports in its own way independently possesses some advantages; you will find that the reports of the departments of the inland revenue, the customs, the post office, and indeed of all the departments, evince a thorough knowledge of the facts, of their signification, and of many of their practical applications. What is felt as a defect is the want of correlation in the tables and classifications. I may mention as an instance of which the inconvenience has been demonstrated by one of your Fellows Mr. Jevons, that the census of the United Kingdom has been taken latterly by three distinct departments, one in England, one in Scotland, and one in Ireland; each department has done its work I may say well; but the facts published are scattered over several volumes; and the classifications of the population by ages, by conjugal condition, by occupations, and, in fine, by nearly everything except sex, about which there was a necessary concord, differed. You could not get aggregates for the United Kingdom at all in some cases; in others without much trouble. So England presented a singular spectacle to the world by the side of other nations. The evil has been remedied by intercommunication between the heads of the departments either direct, or through the Home Office; and the desired harmony will, we hope, be attained in 1871. Though the want of correspondence runs through all our official statistics, it is evident that even when the matters dealt with are different, as in the Customs, the Inland Revenue, the Post Office, the Census, the Admiralty and the War Office, for instance, there are common points of contact as well as of relation and general principle running through all the fabrics, as they all relate to the same people.

The Board of Trade has since the days of Mr. Porter—ever to be remembered by us with reverence—published a most useful series of tables, which are in every statist's hands; but these tables do not meet the whole of the case; and after the decisions on statistical organisation arrived at by the Congress of Paris had been brought by me under the notice of Her Majesty's Government, Mr. Wilson, once one of your Fellows, then Secretary of the Treasury, established the

chief departmental reports. The time has come when the country might enjoy under the third system, the advantages of both the others, without their inconveniences. All that is necessary is the constitution of a Board, at which the principal statistical departments are represented, with a president, a vice-president, and a secretary. This Board should possess the power to insure correlation in certain things, leaving the departments full liberty in others. Connecting all the Government departments it might have for its president the Prime Minister; for its vice-president a statist named by him, or elected, as he might determine, by the other members. On this Board, to which all the forms of public returns might be referred, should sit representatives of the Houses of Parliament: economies of various kinds would be one of the results. The statistics of Scotland and of Ireland would be duly represented, but I contend that on this Board, divisible into committees, should also sit representatives of India and of our principal Colonies. The statistics of the empire will thus be brought to work together in harmony; science will gain by great generalisations, and the community of statistics will be another bond of union between us all in both hemispheres: the circle will be complete.

Now let us turn to our own organisation. This Statistical Society of London, independent as you know of all Governments, has existed for thirty-seven years, and during those years has done a great deal of good work, which is not all shown in the volumes of its *Journal*. It has done much indirect good, and has thrown light unrefracted by party passion, *lumen siccum* as perhaps Bacon would call it, on all the political questions of the day; for proofs refer only to the papers of the last Session. But the time has come, in my opinion, which I hope you share, when the country has a right to expect more from this Society, and when its Fellows are prepared to meet fully those legitimate expectations. Some changes you made at your last annual meeting, cannot fail to bear fruit: you retain all the past Presidents on the list of Vice-Presidents; and the thirty-one open places on the Council leave room for the yearly accession of a certain number of young, contributing Fellows.

[You will be gratified to learn that His Royal Highness the Prince of Wales has consented to become the Honorary President of this Society in which his illustrious father took a deep interest.]

The Council consists of the president, thirteen vice-presidents, and twenty-six other members.

Mr. Lumley, Q.C., who has for several years, with great advantage to the Society, been one of the honorary secretaries, having become a vice-president, is succeeded by Dr. Mouat whose valuable reports are well known. The Council expects to derive much benefit

from Dr. Mouat's leisure, and from his well-known administrative energy. Improvements of various kinds, which will receive the serious attention of the Council, have been suggested. A library committee has reported, and the library will be replenished with all the good statistical works in our own and in other languages. Facilities of reference will be increased. The papers sanctioned are printed now, and appear every three months; but without any report of the critical discussions, which are often most interesting, and in the view of some Fellows, indispensable. It will perhaps be possible—as some of the best papers refer to questions of immediate interest—to accelerate the publication of the *Journal*: the French Statistical Society publishes its proceedings monthly. Several scientific societies have felt the necessity of complying with the demand of the times for the earliest possible information; and this demand is especially likely to arise in our Society, as many of the Fellows live at a distance from London. Dr. Mouat tells me that the cost of the *Journal* limits its circulation abroad, where we have extensive connections, and whence the latest statistical news in a digested form could be supplied through our Congress Organisation. The greatest want of the Society, however, is a convenient Building for its periodical meetings. The Council is acting through a committee with other societies, and keeps this object constantly in view. We solicit the co-operation of every Fellow; and I may venture, on my own responsibility, to request the zealous friends of science, versed in finance, to consider whether the object we all aim at would not be promoted by establishing at once a Special Building Fund in connection with each of the various scientific societies now without a local habitation. We have asked Her Majesty's Government for a site; and you will see in the *Journal* the conversation in the House of Commons to which our excellent friend, Sir John Lubbock, gave rise. A fine Hall of Science on a good site, would be something substantial, and be better fitted than many measures that make a noise, to hand down the memory of the administration of Mr. Gladstone—our eminent ex-President—to ages to come.

Since the opening of the last Session we have lost four Fellows by death. Mr. Hopf, an honorary German member, was much esteemed by all who knew him: he contributed valuable papers to the statistics of life insurance.

Albany Fonblanque was one of the great political writers for which, as well as for its orators, England is famous; he was associated with the Hunts and with Forster in the "*Examiner*:" he may justly claim a place by the side of Defoe, Swift, Addison, and

Francis. As a political writer he was entitled to a place in the Statistical Society. He succeeded Mr. Porter at the Board of Trade; but the very high pitch of excellence he had attained in one line, apparently made him shrink from venturing far on another. His praise will be "hymned by loftier harps than mine," and I shall say no more; but having had the opportunity of appreciating the charms of his society, as his colleague at more than one statistical congress, I could not say less.

Last year when I spoke of Mr. Babbage as one of your founders, I had no expectation of having to refer to the loss of another. We shall see Colonel Sykes no more amongst us; but his name will be held in remembrance. He sat with Malthus and Babbage in that room in Dorset Street when it was decided to establish the Statistical Society; he was one of your presidents, and up to recent years he took an active part at the meetings, where he read several valuable papers, chiefly relating to our Indian empire.

William Henry Sykes was a Yorkshireman by descent. He was born on the 25th of January, 1790; and at the early age of 14 entering the service of the East India Company, proceeded to Bombay. He was the child of that Company, then in its zenith. After passing through the ordinary regimental routine, he was placed on the general staff at the age of 25. He served with Lord Lake's army at the first siege of Bhurtpoor; received a medal and clasps for his services; in 1818 commanded a field force south of Punderpoor: was subsequently engaged on the trigonometrical survey; and appointed in 1824 he held the post of statistical reporter of the Decan until he returned home in 1831. He obtained the rank of colonel in 1833. After his retirement, Colonel Sykes was not inactive. He wrote sixty papers for this and for other learned societies, on the ancient history, antiquities, statistics, geology, natural history, and meteorology of India. As he advanced in age, honours accumulated on his head: elected a director in 1840, he became deputy-chairman of the East India Company in 1855, chairman in 1856, member of parliament for Aberdeen in 1857 at the ripe age of 67. He remained chairman of the East India Company—now the shadow of a glorious name—until the date of his death on the 16th of June, 1872. The old soldier laid down his arms in the eighty-third year of his life; and it may be truly said that his years, until the last two, were "labour and gladness" rather than "labour and sorrow" in the desponding language of the Psalmist. Labour was his real delight until illness disabled him. His papers, published in the *Journal*, extend over thirty-one years (1835-66); they speak for themselves. Every one will be found replete with facts; and every one has a practicable bearing. It

was a great advantage to the Society to have in its ranks an ever-watchful representative of India, with which our national destiny has become strangely wound up.

Colonel Sykes was a statist of the old school, and a strict disciplinarian; we all remember the curt, and perhaps not very courteous terms in which he denounced speculations apparently unsustained by facts. The unfortunate reader, unless he had strong nerves, quailed beneath the President's denunciations. Yet under those brusque tones beat a kind heart. In his days of power young scientific men always found in him a friend; he gave many of them appointments. The soldier's orphan, the widow, the wronged officer, the despoiled prince, the people, ever had in him an indefatigable champion. A cry for Help softened him at once. He maintained his integrity through his fourscore years of life: "Sykes," said Dr. Bird, who knew him well, "is a very honest fellow; he came back from India a poor man, when he might easily have been a rich one."* He never lost because he never injured, never deceived and never deserted, a friend: his constituents in Aberdeen, and his constituents in the East India Company, remained attached to him, as you did, to the end.

Colonel Sykes had well defined characteristics, but he was also a typical Englishman, especially of the Englishman that has lived for years in India. He believed in statistics; he was a founder of this Society which will ever remember him with honour.

The card contains a list of some of the proposed papers: but through an accident it does not notice two of the first importance. The one by Mr. Janson will contain a digest of valuable statistical information respecting the statutes of the realm: their extent, and the extent of annual changes in them, either by legislation or otherwise. The facts will surprise you. They may strengthen the hands of those who, like Mr. Stephen, think English law, instead of remaining in a state of chaos, should be embodied in an intelligible code. Mr. Martin, of Lombard Street, has a paper in hand, comprehensive, full of information, and of the highest interest, on the Purchase of the Railways by the State. This paper will probably give rise to a lively discussion; so may the paper on the "Bill of Circulation" by Mr. Palgrave; the Accounts of the City of London by Mr. Giffen; and the paper on the New Domesday Book by Mr. Fellowes.

Thanking you for your constant kindness, I have now, gentlemen, to declare the Session opened.

* I am indebted to our honorary secretary, Mr. Purdy, for this anecdote, who supplies other instances of kindness of heart.

REPORT *on the* EIGHTH INTERNATIONAL STATISTICAL CONGRESS, *held*
at ST. PETERSBURG, $\frac{22\text{nd}}{10\text{th}}$ *August to* $\frac{29\text{th}}{17\text{th}}$ *August, 1872.* By SAMUEL
 BROWN, F.S.S.

EVERY meeting of the International Statistical Congress appears to have a new and increasing interest. It cannot be denied that since the first of these Congresses, which was held in Brussels in 1853, a considerable improvement has been effected, not merely in the methods of statistical research, but in giving to the inquiries in every branch such a scientific character as greatly to enhance the value of the observations collected. What was wanted, above all things, was uniformity. Hundreds, we might almost say thousands, of volumes—collected and published at great expense by the different Governments, by Societies, or by individuals—were rendered almost useless, in an international point of view, for want of some uniform method of classifying and showing the results. It was impossible to make comparisons, and so to eliminate the laws of probability of occurrence of large classes of events in social or political economy. Yet, without the discovery of these laws, the social, moral, and intellectual condition of a people cannot with any certainty be traced. Every one who has occasion to consult our own Government “blue books,” and similar publications in other countries, will observe that this desired uniformity is gradually being introduced. We cannot but attribute a great part of this happy result to the labours of the eminent official and scientific men who have brought their theoretical knowledge and practical experience to bear on the discussions of the numerous and important questions which have been debated at these meetings.

At the Seventh Congress at the Hague, in 1869, a most earnest invitation for the next meeting was given on the part of the Government, the Scientific Societies, and the people of Russia; and the Organisation Commission, to whom the question was left, decided that the next Congress should be held at St. Petersburg, in 1871. The political state of Europe, however, caused it to be deferred till the present year, and an imperial decree, of $\frac{24\text{th}}{12\text{th}}$ November, 1871, appointed a Commission to prepare the programme, and make the necessary arrangements. The Emperor Alexander II, desirous of showing the real interest which he took in the labours of the Congress, nominated as the Honorary President His Imperial Highness the Grand Duke Constantine Nicolaievitch, President

of the Council of the Empire, and of the Imperial Geographical and Archæological Societies.

The Organisation Commission, comprising the names of some of the most eminent statisticians of Russia, was placed under the presidency of one of the ministers, and had as vice-presidents the Prince Lobanow Rostowsky, of the Ministry of the Interior, and President of the Statistical Council; General Greigh, of the Ministry of Finance, and President of the Council of Manufactures, and the Councillor of State, Semenow, Director of the Central Committee of Statistics, and President of the Preparatory Commission, and on him devolved the duty of conducting the correspondence with the statistical bureaux and the foreign members of the Congress.

By this Commission an outline of the intended programme was prepared and sent to various foreign members, and suggestions and amendments invited, so as to secure for it an international character. I need not enter into much detail on the topics therein proposed for discussion, as a very excellent summary of this "avant-projet" was prepared for the Fellows of this Society by our able colleague, Dr. F. J. Mouat, and published in the June number of the *Journal* for this year. Two of the most important questions were to be referred to the avant-congrès, a sort of preliminary congress, composed principally of the official members, and intended to save the time of the General Sections for their more special labours. These questions were—

- A. The organisation of the International Congress.
- B. The work which had been undertaken by the Congress in the preparation of international and comparative statistics.

Besides these questions, there were to be considered some special propositions of foreign members, such as that of Dr. Engel, relative to an international geographical dictionary.

The avant-congrès was to meet four days before the opening of the general session.

At some of the previous Congresses it had been observed that, when the Sections were too numerous, the absence from some of them of the foreign members, and especially of the official delegates, deprived the discussions of that international character which it was the great object of the Congresses to maintain. The Commission then judiciously proposed to confine the number of Sections to four only, and classified the subjects which should be referred to them.

But as these Sections were afterwards increased to five, and the subjects somewhat altered, I append the questions as they finally appeared in the large programme, with the names of the authors who undertook each part. These introductions frequently contain

matter of great historical and suggestive interest. I have also indicated on what page of the programme the actual resolutions proposed to the Congress to pass will be found.

Section I.

A. Questions presented to the avant-congrès:—

1. *Organisation of the Congress.* Semenow, p. 8, project 1 to 6.
2. *Publication of International and Comparative Statistics.* Semenow, p. 10, rules 1 to 3.

B. Reports submitted direct to the Sections:—

3. *Some Questions relating to Population Censuses.* Semenow and Makshéew, p. 28, Art. 1 to 18.
4. *Nomenclature of Professions in the Census Tables.* Maïkow, p. 33, Art. 1 to 3.
5. *Registration of Facts relating to the Physical Development of Man.* Wreden, p. 43, I to XV.
6. Questions relating to sanitary statistics:—
 - i. *Statistics of Cholera.* Semenow and Archangelsky, p. 46, 1 to 12.
 - ii. *Statistics of Syphilis.* Pelikan and Sperck, p. 49, A to F.
7. *Graphical Method in Statistics.* Semenow, p. 56, two propositions.

Section II.

1. *Registration and Publication of Facts relating to the Movements of Population.* Jahnson, p. 3, Art. 1 to 4; p. 4, Art. 1 to 4; p. 6, Art. 1 to 6.
2. *Registers of Population.* De Bouschen, p. 12, Art. 1 to 3.
3. *Special Registers. Statistics of Prostitution.* Prince A. Mestschersky, p. 16, Art. 1 to 3; Art. 1 to 10.

Section III.

1. *General Industrial Statistics.* Weschniakow, p. 7, Art. 1 to 17.
2. *Natural Classification of Occupations.* Weschniakow, pp. 11 to 29.
3. *Statistics of Mines and Factories.* Jossa and Bock, pp. 34 to 43.

Section IV.

1. *Postal Statistics.* Poggenpohl, p. 9, Art. 1 to 6.
2. *Organisation of Commercial Statistics.* Thœrner, p. 17, Art. 1 to 15.
3. *Nomenclature of Merchandise of an International character*

Transported by Water Communications. Zvierinski, p. 27, Art. 1, 2.

4. *Nomenclature of Merchandise of an International Character Transported by Railways.* Koulomzine, pp. 40 to 43.

Section V.

1. *Registration of the Facts in Criminal Statistics.*

- I. Mayr, p. 7.
- II. Raïevsky and Outline, p. 16, Art. 1 to 5.
- III. *Casiers Judiciaires.* Outline, p. 17.
- IV. *Nomenclature of Crimes.* Tagantzeff, pp. 18 to 79.

The very elaborate programme, containing many able articles on the subjects above referred to by members of the Commission and others, awaited the members on their arrival at St. Petersburg. It may also be noticed here that the admirable *resumé* of all the resolutions and conclusions of previous Congresses which had been begun at the Berlin Congress by Dr. Engel, and continued at the Florence Congress by S. Maestri, was further extended to include the reports of the Hague Congress under the valuable supervision of M. Semenow.

The opening of the "avant-congrès" was fixed for Monday the ^{19th}/_{7th} August, and by that date many members had arrived by various routes from all parts of Europe; we may say even from all quarters of the world, since at the Congress were assembled, amongst others, the representatives of America, of Egypt, and even of Japan, so recently welcomed into the family of nations. The session was opened in the Ministry of the Interior, and M. Semenow, as vice-president of the Organisation Commission, having taken the chair, made a short address to the members. He thanked the delegates and the Governments who had sent them, for the zeal and love of science, which had induced them to undertake so long a journey to the great centre of intellectual life nearest to the Pole; reminded them that when Peter the Great determined to bring Russia into more direct contact with European civilisation, he had found here but a few fishermen's huts in a barren waste, which was now a splendid city of 700,000 inhabitants, and now in the two-hundredth anniversary of the birth of their great reformer, they received with sympathy and respect the representatives of those nations which had preceded them in science and civilisation, and welcomed them with the hospitality which had ever been distinctive of the character of the Russian people in its southern centre, and which the frozen regions of the north had not abated. He then proceeded to explain the work which the avant-congrès would have before it, and proposed that, to constitute the bureau, the distinguished and venerable

M. Quetelet, whom all regard as at the head of statistical science, should be the Honorary President, and that to relieve him of the actual labour, MM. Engel and Farr should be elected Presidents. This was unanimously agreed to, with the addition of M. Semenow, on the proposition of Dr. Engel, which was received with much applause.

The secretaries named were M. Maurice Block for France, M. Mayr for Germany, M. Hammick for England, and M. Wilson for Russia, to whom was afterwards added M. Bodio for Italy.

Part of the work of this avant-congrès was the revision of the subjects to be referred to the different Sections and the times of meeting, so as to give to as many members as possible the opportunity of attending the discussions. It was agreed that every speaker should be allowed to use his own language, which it was afterwards found convenient, in some cases, to translate into French, as more generally understood.

Two papers presented by MM. Ficker and Schwabe, on the Graphic Method in Statistics, were referred to a sub-commission to report on; and the question of the general reduction of military expenses in all countries, which Mr. Edwin Chadwick had proposed at the Hague, was deferred for a future Congress.

But the two most important questions before the avant-congrès were the publication of the international and comparative statistics, and the future organisation of the Congress.

The former had been first suggested at the Congress of Vienna, in 1857, by M. Quetelet, who, with the assistance of M. Heuschling, has since compiled a very elaborate volume of population statistics, It contains a valuable summary of the official returns in different States, reduced as far as possible to the same form, the same periods of observation, and the classification of facts at the same groups of ages for comparison. This admirable work, however, shows how much remains to be done to carry out the objects of the Congress and to utilise the immense amount of materials which are constantly accumulating. To carry out and to extend the plan, Dr. Engel, at the meeting at the Hague, in 1869, further proposed to divide amongst twenty of the different States of Europe the compilation and preparation of international statistics, each one to undertake the completion of one or more parts of the whole programme. The arrangements were made and the parts were allotted; but since then difficulties had arisen as to the nature of the materials to be used, and the mode of using them. In the discussion that ensued some speakers were in favour of confining the statistics to such as could be furnished in the forms required by the resolutions of the preceding Congresses. Others thought that existing documents, even

if unpublished, might be utilised, rather than run the risk of so valuable a compilation being indefinitely deferred. It was eventually decided that the resolutions at the Hague should be carried out, the delegates who had undertaken the different parts to employ, as far as possible, the formularies sanctioned by the Congress, but to modify them where absolutely necessary—to use, first of all, existing publications, and to send round a plan of their work, with a list of the documents already at their disposal, and what they required to complete them; and the various bureaux referred to to be invited to send any existing works, and copies of such authentic documents on the subject as were still unpublished; and if possible to cause special researches to be made where the information was defective. It was considered desirable, however, that the delegate in his report should distinctly state when his authority was a printed official document, or unpublished information given by public departments, or from what source, if otherwise derived.

On the motion of Dr. Engel, the special statistics of great towns, which had been omitted in the programme at the Hague, were allotted to MM. Schwabe of Berlin, and Köröli of Pesth; and the statistics of insurance, which M. Hopp, of Gotha, had undertaken, but was unable to continue, and the work of which his lamented death would now have stopped, were assigned to the Hon. Wm. Barnes, delegate from the United States of America.

M. Kiær proposed that all the parts of the general plan of statistics should be treated in the geographical order of European countries, of which he gave a sketch, beginning from the northern States, and which it was referred to a small sub-committee, consisting of MM. Levasseur, Kiær, Farr, Mayr, and Semenow to settle.

At a subsequent meeting of the official delegates, held with the view of ascertaining what progress had been made in the actual work, and what difficulties there were still to overcome, it appeared that many portions of the programme were still in arrear waiting for official documents or replies to specific inquiries. Various parts were re-allotted, some new working members added, and promises made by the representatives of different States that the information deficient should be, as far as possible, furnished without delay.

There is now reason to hope that this great and important work, the first real attempt to carry out on a grand scale the various resolutions of the eight Congresses will rapidly proceed. When completed, it will present a comparison of international statistics in every branch of inquiry of which it is difficult to over-estimate the value, and which will show in the clearest light where defects exist, and in what direction further improvements ought to be effected.

The question of the organisation of the Congress was one of

equally pressing importance. In the course of twenty years, since that eminent statistician, M. Quetelet, had first successfully established these Congresses, the greater part of the questions relating to social phenomena in every branch of statistics had been discussed, principles defined, modes of research laid down, and methods of exhibiting facts agreed to, so as to give every facility in the comparison of the same classes of results in different countries; yet when, as in the work just referred to, it was proposed to proceed to the practical application, and compile a body of international statistics, many States found themselves unable to furnish the information in the forms required. It seemed as if the Congress had aimed too much at imaginary perfection, at abstract science, and had not succeeded in carrying its theoretical decisions into practice.

Dr. Engel, at the Congress at Berlin, in order to remedy this defect, had proposed a Permanent Commission to watch over the general interests of statistics; but it was objected that such a commission would have too much the character of a private institution. In the present form of the Congress the appointment of the official delegates influenced the various Governments to accept the decisions of the Congress, if not as absolutely binding on them, yet to be treated with the deference due to a scientific body, of which their own representatives had formed part. This result, it was feared, would be lost in the alteration proposed.

A commission was formed to report on the subject, and at the Congress at the Hague much discussion arose on several propositions made by M. David, and various amendments thereon by other members, but no decision was arrived at, and the question was again deferred to the present meeting. Based upon a vote at the Congress of Vienna, four propositions were submitted to the following effect:—

1. That before the actual Congress there should be a conference of the official delegates and men known in statistical science, who were to meet four days before, and to sit during the session.
2. That between the sessions of the Congress there should be a meeting of official delegates to deliberate as to carrying into effect the decisions of the previous Congresses, and to promote a cordial union between the representatives of official statistics in different countries.
3. That the intervals of meeting of the Congress might be extended to five years, the meetings of the official delegates being held at least twice in the interval.
4. Every statistical programme presented to the Congress must

be accompanied by a report, after an international inquiry on the subject to which it refers, the plan and nature of the research to be settled by the conference of official delegates.

When the questions came to be discussed in the *avant-congrès*, various difficulties appeared. The Governments might claim the right of appointing their own delegates in lieu of those named by the Congress. If the delegates were numerous, it is doubtful if there would be energy and unity in action; if few, the countries not represented might not hold themselves bound to submit to their authority. How and where, and at what intervals, were the delegates to meet, and how to keep up correspondence in the meantime? Who should be the president and the secretary, and how were they to be appointed?

The Assembly at last came to some general resolutions.

1. In favour of the institution of a Permanent Commission.
2. To name a sub-commission to report on the constitution of the Permanent Commission, and the functions it should possess, and to report thereon at a special meeting of the *avant-congrès* to be called by the president.
3. That the future meetings of the Congress should be held at least once in three years.

The sub-commission appointed consisted of MM. Quetelet, Engel, Yvernès, Berg, Wirth, Baumhauer, Ficker, Semenow.

To complete the history of this question I may state that the report of the sub-commission was presented to the general assembly on Thursday, 29th August, and the conclusions were adopted. They were to the following effect:—

1. There is constituted a Permanent Commission of the International Statistical Congress.
2. This Commission is composed of the members to whom is assigned the duty of preparing the international statistics. Other countries not represented amongst them have the right to name delegates to the Permanent Commission.
3. The president of the Commission from one Congress to another is the organiser of the last Congress.
4. The president names his secretary.
5. The Permanent Commission is to meet at least once during the interval of each two general meetings of the Congress.

Its functions are—

- a. To require information as to the carrying out of the decisions of the Congress in different countries, and on the difficulties in the way, and to examine if these difficulties require the decisions to be revised.

- b. To follow out the assimilation of the statistical publications in different countries, so far as is necessary for international purposes.
- c. To call the attention of the organisation commission to the questions to be debated at the next Congress, and to assist in preparing the programme for the session.
- d. To obtain international researches, so as to present to the organisation commission of the following session reports on the state in each country of the questions to be proposed. Every report to the general assembly of the Congress on any question should be preceded by an international inquiry.
- e. To complete any international work of the character of that agreed upon at the Hague, to decide upon any questions which arise in the course of their execution, and to arrange the programmes.
- f. To revise the publication of the decisions of the Congress.

This question being so satisfactorily settled, we may hope to see a great impetus given to the compilation and publication of international statistics.

A letter and memoir from M. Maury, presented by M. Quetelet, and a plan for general statistics, proposed by M. Barbantini to the Congress at Florence—were referred to separate committees.

The opening of the actual Congress took place on Thursday, the 22nd August, in the Salle de la Noblesse—a splendid hall, which had been specially decorated for the occasion. By this time nearly the whole of the foreign delegates had arrived, and the list includes some of the most eminent writers and thinkers in statistical science in every country. Amongst them the following are the names of the delegates appointed by our Council from this Society, most of whom were present and did good service in the several Sections:—

William Farr, M.D., D.C.L.,
F.R.S.
Samuel Brown.
Hammond Chubb, B.A.
Archibald Hamilton.
James T. Hammick.

Frederick Hendriks.
Professor L. Levi.
Frederick J. Mouat, M.D.
R. H. Inglis Palgrave.
Thomas B. Sprague, M.A.
William Tayler.

The delegates from the British Government were Dr. Farr, Mr. Reader Lack, and Mr. Hammick.

The Honorary President of the Congress, His Imperial Highness the Grand Duke Constantine, on taking the Chair, made an address to the members in French, which may be briefly summarised to the following effect:—

Alluding to the new sciences which the activity of the human intellect had lately brought to life, he pointed to statistics as one of the most rapid growth. The study of man in his political and social life formed the centre of new investigations, and, thanks to the scientific methods employed, and the genius and labours of the eminent man whose name all would recognise, and whom they had the honour to find amongst them (Quetelet), statistics had already taken rank amongst the sciences, notwithstanding the doubts which some entertained as to its limits, whether, in fact, it was anything more than an art, or even simply only a method of investigation. Without discussing these different opinions, he would draw their attention to a few incontestable facts. The observations concerning the state and movement of the population, the law of births and deaths and duration of life as influenced by different conditions of society, the tides of national prosperity and the study of the different moral phenomena, do not these and many other similar questions constitute a special study, without interfering with the domain of the physiologist, the economist, the psychologist, and the historian?

It is no reproach that the study of statistics has not yet led to the discovery of any great universal law, as in astronomy and physics. The researches are yet too recent, the field hitherto explored too narrow. There are yet phenomena in political and social life to be observed which, aided by discoveries in other sciences, may bring to light new laws, and lead to its becoming a science, the limits and application of which it would be difficult now to define. This may be left to the future. At present there is ample ground to cultivate.

But in recognising in statistics the science of social phenomena, it cannot be denied that it partakes also of a technical character. The true methods of investigation, the systematic arrangement of facts are essential to the discovery of new results, and the more these are perfected, the more rapid and sure will be the progress of the science itself.

Whether a science, art, or method only, statistics exists for the good of humanity. Its object and the aim of those who labour in it are to discover under what laws, in what institutions, or under what physical and economical conditions the well being of man is most assured, and to search out the sources of the evils which arrest humanity in its progress. The wise advice given to one man by the sage of old, "Know thyself," is now addressed to society at large. He then drew the attention of the members to the advantages which had accrued to those countries in which the Congress had already met, by the attention which it forced the Governments to yield to

these questions, and by the stimulus which it gave to the improvement and increase of statistical researches. The Russian Government, as early as the Congress at Vienna, had followed with watchfulness and interest the labours of the Congress, and learnt with the liveliest pleasure the decision at the Hague, that the next Session should be held in St. Petersburg. It was grateful for the honour of receiving so many representatives of statistical science from all parts of the world, and considered it a pledge of future progress in the country, of uniting its statistical institutions with those of other countries, and as involving a moral obligation on the Government to carry into practical effect the resolutions of the Congress. The geographical position of Russia, and the conditions of her political and social life, give a peculiar interest to statistical studies there, and offer novel and divergent views from those of other States. In one respect the phenomena to be studied present themselves in a form less complex than in any part of Europe. A vast part of the Empire is peopled with one and the same race, of the same religion, a rural population, without towns, occupied in the same kind of labour, with the same distinctive traits, in vast tracts extending over tens of degrees of latitude and longitude from the forests of the north to the steppes of the south, affording, on a grand scale, statistical data under like conditions, from which it may be easy to obtain the constant and the variable causes at work.

On the other hand, by the great variety of its climate and territory, plains and mountains, steppes and forests, with tribes of every race and of different religions, in every degree of moral and intellectual development, Russia offers a new study for the statistician and the economist. The influences of various physical conditions on the laws of population, and on the moral and intellectual progress of man, the density of population from the highest to the lowest degree, afford many points of interest to study; and the regularity, systematic order, and uniformity of observations throughout this vast extent of country, and over a population of 80 millions, cannot but afford materials great, rare, and precious for the elucidation of many disputed or doubtful problems.

With these reflections, and convinced that the labours of the Congress would tend to the advantage of science and of his country, His Imperial Highness concluded by giving to the members a cordial welcome in the name of the Government of his august brother, and declared the Congress opened.

This discourse was received with much applause.

The provisional regulations agreed to in the *avant-congrès* were then read and adopted, and the meeting declared the Provisional Bureau named in Russia, to be the permanent Bureau of the

Congress, adding thereto, as foreign representatives, the following list as finally corrected for honorary vice-presidents:—

(Allemagne)	Germany	Dr. Meitzen.
(Amérique).....	United States	M. Young.
(Autriche)	Austria	Dr. Ficker.
(Bavière)	Bavaria	M. Mayr.
(Belgique)	Belgium	M. Quetelet.
(Brésil)	Brazil	M. de Varnhagen.
(Danemark)	Denmark	M. Scharling.
(Égypte)	Egypt	M. de Régný.
(Espagne)	Spain	M. Pascual de Villamar.
(France)	France	M. Levasseur.
(Grand-Bretagne)	Great Britain	Dr. Farr.
(Grèce)	Greece	M. Mansolas.
(Hambourg)	Hamburg	M. Versman.
(Hongrie)	Hungary	M. Keleti.
(Italie)	Italy	M. Correnti.
(Norvège)	Norway	M. Kiaer.
(Pays-Bas)	Netherlands	{ M. Baumhauer.
		{ M. Vissering.
(Portugal)	Portugal	Le Vicomte de Figanière.
(Prusse)	Prussia	Dr. Engel.
(Roumanie)	Roumania	M. Lahovari.
(Serbie)	Servia	M. Jakschitck.
(Suède)	Sweden	M. Berg.
(Suisse)	Switzerland	M. Max Wirth.

Dr. Farr, M. Levasseur, and Dr. Engel, who responded in the name of the vice-presidents for the honour shown to them, alluded to the great advantage the Congress enjoyed in the Presidency of such a patron of science and of so distinguished a member of the Imperial Family as the Grand Duke Constantine, indicating the interest which the Emperor himself felt in its labours.

A tribute was paid to the memory of those eminent men in our science whose deaths we have to regret in the brief period since the last Congress. M. Semenow lamented the death of M. Maestri, of Italy, of whom M. Quetelet and M. Correnti also spoke with deep feeling. M. Semenow also referred to M. Troinitzky, who, in 1859, as Director of the Central Statistical Commission, laid the foundation of official statistics in Russia. M. Ficker recorded the loss in Austria of Professor Springer, Fred. Stein, Director of the Statistical Bureau of Vienna, and of Chevalier Valentin Streffer. M. Baumhauer paid homage to the memory of M. Soudeman, of Denmark, and M. de Bouschen, of Schnitzler, who had devoted himself to the study of Russian statistics. Dr. Farr and M. Quetelet spoke of the loss which many branches of science had sustained by the death of Mr. Charles Babbage, one of the founders of this

Society; and M. Levasseur of M. Jules Duval, the founder and editor of the "Economiste Français."

To the list of secretaries were added the names of M. Mayr, Maurice Block, Bodio, Erben, Pencovitz, Count Puslovski, and Worms. The meeting was then adjourned, and the various sections repaired to their rooms in the Ministry of the Interior to elect presidents, vice-presidents, and secretaries for each, and arrange the work for the morrow.

The discussions in the Sections were continued from Friday, ^{23rd}/_{11th} August, to Tuesday, ^{27th}/_{15th} August; and the last three days, Wednesday, ^{28th}/_{16th}, to Friday, ^{30th}/_{18th} August, were occupied by the general assembly in receiving the reports of the different Sections. Several points of great interest arose and were disposed of, after much debate, in the Sections; but it would occupy too much space to record them, and it will be best briefly to state the subjects in each Section, and the conclusions arrived at, as confirmed or amended in the general assembly.

In the First Section "*questions relating to the population censuses*" formed the first subject of debate. From the very first Congress, nearly twenty years since, these questions have been constantly before the meetings, and great improvements have been effected in every country; but the decisions of the Congress have not all been carried out in like manner, nor to the full extent. In the large programme a full historical account is given by the able writers of the progress made towards uniformity; and the nature of the questions which gave rise to long and animated debates in the Sections will be best understood by the conclusions, much modified from the original propositions, which were arrived at, and finally adopted in the general assembly.

1. In order to avoid mistakes and prevent repetitions, distinction must be made between—

- a. Population de fait (actual population).
- b. Population de sejour habituel (of usual residence).
- c. Population de droit ou légale (legal population).

By the first term is understood the persons present at the place where, and time when, the census is taken; by the second term all persons usually resident in the place where the census is taken, adding to the actual population those who are temporarily absent, and deducting those who are temporarily present; by the third term those who have a legal residence in the place where the census is taken, and registered as such where any registration exists.

2. The general population censuses should be of individuals by name, and extend to the "population de fait" (actual population).

3. As to international rules for determining the population

usually resident and the legal population, no decision is made, seeing the impossibility of establishing uniform rules, and the great diversity of legislation which prevails in different countries at different times.

4. The censuses should be taken at least once in ten years, in the years terminating with 0. The intermediate enumerations are left to the various Governments to determine.

5. The censuses should be taken in one day, or at least relate to a fixed day and hour.

6. The organisation and control of the censuses are left to the arrangement of each Government, but it is very desirable that they should be made by special agents, and with the aid of the people themselves.

7. The "population de fait" to be obtained by individual bulletins, if the degree of instruction and other circumstances warrant it; if not, by family or household bulletins. In the former case lists must be added, showing for each person the degree of relationship or connection with the head of the family and the household. In individual bulletins direct questions put to the individual are the best.

8. The information required by the census papers is essential or discretionary. The former comprises—

- a. Name and christian name.
- b. Sex.
- c. Age.
- d. Relation to the head of the family and the household.
- e. Civil state or conjugal condition.
- f. Profession or occupation.
- g. Religious profession.
- h. Language spoken.
- i. Knowledge of reading and writing.
- j. Origin, place of birth, and nationality.
- k. Usual residence, and nature of residence, in the place where the census is taken.
- l. Whether blind, deaf and dumb, cretin, idiot, or of unsound mind.

All other special inquiries are discretionary.

9. Wherever practicable, the age should be indicated by the year and month of birth. When age is expressed by years it should be by years completed. For infants under 1 year, the age should be expressed by months completed.

10. The connection with the head of the family and household is expressed by the degree of relationship or the position in the household (as preceptor, servant, workman, apprentice, lodger, master of house, &c.).

11. The question of conjugal condition relates only to legitimate unions, and divorces and separations legally pronounced.

12. By profession is to be understood the occupation from which the individual derives his principal income, or to which he devotes the most of his labour. Any one having more than one occupation should insert them all, and say which he considers the chief. He should also indicate in his occupation if he is master, assistant, or workman. In individual bulletins any one not having an occupation should indicate that of the father of the family.

13. Religious belief means the religion in which a person is born, or which he may have afterwards embraced and holds, that is, any church to which he belongs.

14. For knowledge of reading or writing it is sufficient to say if the person possesses such knowledge, whether perfect or imperfect.

15. The "place of birth" applies only to persons born out of the place when the census is made. If possible, the commune should be indicated, or at least the great territorial division of the place of birth (county, canton, Government, province, department, &c.). For foreigners, the country from which they come should be stated.

16. The rules for indicating the usual residence, temporary residence, legal domicile, &c., are for the present left to the arrangements of the different States.

The nomenclature of professions in the census tables, originally proposed for this Section to discuss, was referred to Section III, as part of the subject of the industrial census.

"*The registration of facts relating to the physical condition of man*" admits of great variety of treatment. In a sanitary point of view the health of the population may be considered in reference to the various causes which affect it. The soil, the climate, the air (more or less impure) which they breathe, food and drink, muscular exercises, and labour, all require to be investigated. Occupations and their effect upon health, the sewage of great towns, the sanitary condition of the army and the navy as affecting their efficiency and cost, enter into the question, and have been discussed at different Congresses. The observations require to be constantly renewed, and under different circumstances, and the difficulty is to find large groups of people among whom the facts may be examined and recorded with sufficient minuteness to afford materials for sound reasoning. Professor Wreden, in his very interesting part of the programme points out the classes at different ages of human life amongst whom the physiological facts may be best obtained. He also brings together the decisions of the previous Congresses on the subject, and sums up, in fifteen resolutions which were passed by

the Congress on the report of Dr. Bredow, what is still required as to the methods and objects of research.

Amongst these the most important are as to the measurement of the human body, that they should be metric measures, that the apparatus should be specified, and also the number of measurements taken; that in living persons the points to determine are the proportion of the bones, the development of the muscles and the organs of respiration, and for this purpose the same specific parts of the body should in all cases be measured, and the same class of facts observed, as the height, the weight, strength of the loins, circumference of the chest, breadth of the shoulders and the haunches, circumference of the head, and length of the extremities. As to the mode of obtaining information, medical men and midwives might fill up the registration cards for infants immediately after birth. Foundling hospitals, infant asylums, orphan establishments, &c., should be required to send to the statistical bureaux annual returns on the proper forms as to the children under their care. Similar returns should be made by schools and such like establishments as to their pupils. All sanitary establishments, public and private, hospitals, refuges for the blind, the deaf and dumb, for cretins, idiots, insane, &c., should be required to fill up the schedules. All gymnastic societies, rifle clubs, yacht clubs, and similar associations might be requested to furnish the details for their members, or, if they registered these facts, to revise and complete them uniformly for the use of the Statistical Bureaux. The forms agreed to at Berlin for statistics of recruits, and at London relative to the vital statistics of the naval service, might be enforced for such classes, and the same system might be adopted for prisons, penitentiaries, and juvenile houses of correction. It would be desirable also that assurance and benefit societies should give in their medical examinations on a uniform plan.

The *questions relating to sanitary statistics*, involved a discussion on the cholera of great interest and animation. The propositions in the programme, twelve in number, related to a variety of inquiries to be made as to the personal history, health, habits, &c., of the person attacked with the disease, and also as to the manner in which he first caught it, and the results of the medical treatment, and minute questions as to the locality invaded, its sanitary and atmospheric condition, and the mode in which the disease appeared and spread. The subject, together with the report on syphilis, was referred to a sub-section, under the presidency of M. Middendorf, and various alterations made in the questions proposed. On being brought before the General Assembly, by Drs. Benezet and Bredow, another lively debate ensued, some being of opinion that the questions were too long and complicated. M. Castiglione proposed that they should

be referred to the Permanent Commission to revise, but M. Cyon moved an amendment, which was carried, to the effect that medical men and statisticians should take as a guide, as far as possible, the programme now proposed, carry it into effect in the meantime, and report to the next Congress how far it is capable of practical application to throw light on these two calamitous diseases. He also proposed that at the next Congress a larger number of medical men from different countries should be called together to constitute a separate Section for Medical Statistics.

The part of the programme *on the graphic and geographical method of statistics* was also referred to a sub-section for report. The second question was treated in a very able memoir by Dr. Mayr of Bavaria, and has been practically applied by him in some researches relative to the mortality of infants in Southern Germany in 1870; and M. Semenow stated that he had employed the same method with most useful results in researches as to the population of Russia in 1867, which appeared in the second volume of the "Statistical Annual of the Russian Empire in 1871." The conclusions to classify facts by corresponding geographical groups, dividing them by small areas of observation, were approved of, and also to represent the results by aid of diagrams.

The Report of the Organisation Commission on the memoranda of MM. Ficker and Schwabe, on graphic methods in statistics, led to various suggestions of the various methods that might be used.

The conclusions of the Section were somewhat amended in the general assembly, but the general result was that as to uniformity of diagrams the time had not yet arrived for prescribing any precise rules, that *chefs de bureaux* and men of science be invited to send as soon as possible to the Permanent Commission forms of charts and diagrams, with explanations of their objects and use, and that at each Congress the Permanent Commission should prepare an exhibition of diagrams, and recommend the methods which they consider the best.

In the Second Section the principal discussion was as to the facts relating to movements of population, and the mode in which they should be registered. The question is of great importance, as furnishing the means of determining the population at the intervals of the census. It is feared that in most countries the registers are defective in essential facts, those of Belgium and Sweden are perhaps the most effective for scientific inquiries. The first part of the subject related to the *methods of registration*, on which the decisions of the Congress were as follows:—1. That the different Governments should be requested to establish, wherever it does not exist, a civil registration of facts relating to the movements of population, without reference to religious belief; 2, That in countries where the duty of

registration falls upon the clergy, the registers kept by them should be in the form adopted by Congress for civil registration ; 3, That the areas of registration should correspond with the administrative boundaries. The second part of the subject relates to the *facts to be registered*, which, after much discussion by M. Baumhauer, Jahnson, Berg, Farr, Levasseur, &c., was concluded by proposing—

1. That in multiple births there should be noted the sex and number of the children still-born or born alive, whether legitimate or not, and the age of the mother at the date of the births.

2. In birth registers the number of years the mother has been married, and the number of children she has had, including still-born and distinguishing multiple births, and in a mixed population the nationality of the mother.

3. In death registers the occupation should be noted according to the classification for the census.

4. Reiterating the resolutions at the Brussels Congress that the ages in the registers, as well as at the census, should be given with greater minuteness—for the first year monthly, for the second year three monthly, for the third year by years and months. It is thought more desirable that instead of the age the date of birth of the deceased should be given, and that up to the age of five years the deaths of illegitimate children should be distinguished.

5. In marriage registers the degree of consanguinity should be stated.

6. In mixed marriages the religious faith and nationality of the parties.

And lastly as concerns the *official publication of the facts*—

1. That the facts for towns above 20,000 inhabitants should be published separately.

2. That the movements of population be distinguished by months and seasons.

3. That such distinctions should also be made in the classification of deaths under age.

4. The tables should furnish the details under the occupations as classified at the census.

5. In reference to the married population the numbers should be given for every year of age up to 25 years, then for groups of five years up to 100 years of age.

All these resolutions were approved by the Congress.

The question of *registers of population*, so far as they show the amount of emigration and immigration in every part of the country, was treated of as early as the first Congress in Brussels in 1853. The different methods by which such registers may be kept may be compared in the different systems in use in Prussia, Sweden, and Belgium. In almost all countries greater simplicity and exactness

are required, and but slow progress has yet been made towards uniformity. With the view of aiding to this effect, the Congress agreed to the following resolutions in the Report of the Second Section, brought up by M. Hunfalvy :—

1. The Congress recommends to the different Governments general registers of population on some common system, in lieu of the special lists frequently kept.

2. The authorities of communes or of towns to keep the registers by uniform rules, and within limits of registration corresponding to those of the administrative boundaries.

3. Every householder to have a special page. Workmen and servants may be inscribed as members of a household. But where they frequently change, and in large towns, it is preferable to have special registers for the floating population, and give each individual a page.

4. The register should contain the usual facts asked at the census, and any subsequent changes in special columns; deaths, and causes of deaths, changes of residence, time of arrival and departure, temporary absence of more than a fortnight.

5. Reference to any special list to which the name may be transferred.

6. Without prescribing minute forms of registers and methods of keeping them, the Congress would recommend those kept in Belgium and Holland as the most simple and efficacious.

A report presented by M. Huppé in the name of the Second Section, on the *special registers for statistics of prostitution*, was adopted.

On the proposition of M. Körösi, the Second Section further advised that it would be very advisable in great towns to ascertain the influence of the nature of habitations, of density of population, and the more or less prosperous condition of the population on the mortality of the place, as is done for the town of Pesth.

The Third Section was occupied with the very important subject of *general industrial statistics, the natural classification of occupations*, and, as a separate division, *statistics of mines and factories*.

On the first of these questions the Section profited largely by the labours of Dr. Engel, who, in his journeys in Belgium, France, and England, had clearly ascertained the great defects existing in this class of statistics, and the small extent to which the resolutions of the previous Congresses had been carried into practice. In the first Congress at Brussels a general division of statistics of labour was effected, of which manufacturing industry formed the third class; dates of the census were fixed, and the methods and facts to be observed carefully marked out. In Vienna the excellent report of Baron Von Czœrnig, in the programme, led to a lively debate, and

some excellent conclusions as to methods of valuation of industrial products, and the persons to be employed in making them; but even in Austria these rules have been not much observed. Dr. Engel urged the further consideration of the subject at St. Petersburg, and presented some very valuable reports of the labours of a special commission, appointed in 1870, on the industrial statistics of the German Zollverein. Aided by these inquiries, the commission proposed a series of resolutions, which were much debated, but finally passed as thus amended:—

1. The great industrial censuses should be repeated at least once in ten years, and simultaneously, in all countries.

2. There should be, besides, an annual industrial census, demanding only information as to the number and nature of industrial establishments, number of workmen employed, distinguishing sex and age under and above 14 years.

3. The decennial census, to contain the facts stated in Forms A and B (appended).

4. To be collected in the same manner as the ordinary population census.

5. The forms to be filled up by the persons themselves who exercise the calling, or by the authorities, on the verbal information given by them.

6. The local control of the industrial census should be given to commissions, composed of competent persons interested in the progress and prosperity of the industry, being either local authorities or belonging to the industrial class itself.

7. The preparation of the statistical tables to be deduced from the returns, or special localities or territorial divisions, should be confided to the statistical bureaux of each country, who should endeavour to present them, as far as possible, in conformity with the resolutions and suggestions of the International Statistical Congress.

8. The results of the censuses so taken should be regularly published after being submitted to the correction of persons well versed in the technical subjects treated.

9. For the classification of industries the Section has adopted the elaborate scheme of Professor Andréiew, and urges on the Permanent Commission of the Congress to refer it to the Committee of Jurists of the Vienna Exhibition of 1873 as the most suitable tribunal to decide upon a classification to be adopted by all nations, and to apply to such different usages.

10. As to the enumeration of motive powers, machines, and apparatus, the Section would admit the scheme elaborated by the German Commission, given in Dr. Engel's work, "*Die Reform des Gewerbe-Statistik.*"

11, and lastly. The Section, anxious to give an impulse to this

branch of inquiry, and to advance the work of the international and comparative statistics of industry, would not delay the work until new observations in accordance with these resolutions are published, but desires that it should be forthwith commenced and continued with the present materials, even though imperfect, being convinced that it will be gradually perfected in the course of the execution.

The proposal to refer the classification of industries to the special consideration of the jurists at the forthcoming exhibition at Vienna next year was also approved by the general assembly.

The *statistics of mines and factories*, their products, accidents, &c., had been discussed at Brussels, Vienna, and London, but were still in rather a vague form. It was felt that it would be no prejudice to general industrial statistics to make special inquiries as to mines and other large branches of industry, which may have peculiar legislation, or be liable to special taxation, or in which the part of the population engaged may for various reasons live under exceptional social conditions. The Sub-Commission consequently proposed that the Permanent Commission of the Congress should examine this part of the programme, and consider it in connection with the work “Die reform der Gewerbe statistik im Deutschen Reiche und “in den Staaten von Europa und Nord-America,” prepared by the mining authorities of Germany, and should from them deduce a programme, with the aid of persons officially engaged in the statistical departments of mining industry.

The sub-commission then points out the principal points to which attention ought to be directed, especially to include the age of the workmen, the number of days' work in the year, the wages, prices of sale, and cost of transport, the number of accidents reported by the inspectors, &c., and that the periodical returns of different countries should be accompanied by succinct accounts touching the mining legislation, taxes on the products, and customs duties. The sub-commission concludes that the mining authorities of different countries publishing reports on mines, mining factories, and saltworks, should take into consideration the resolutions of this and previous Congresses on these subjects, and especially urges it upon the attention of Great Britain, as holding so important a place in mining industry; lastly, that the publication of annual reports by the Colonies and some of the Spanish American Republics should for the future be made in a more regular manner.

The first subject submitted to the Fourth Section was *postal statistics*, for which a sub-commission was appointed, under the presidency of M. Meitzen, and for which M. Poggenpohl, the writer of the article in the programme, was named reporter. Hitherto the question has been treated more in a financial point of view, but the propositions now extend to the establishment, the national and

international services, the non-deliveries, the movements of the post by land and sea, the estafettes or couriers, number of travellers carried by the postal service, number of horses employed, as well as the receipts and expenses under different heads. Under all these heads the different governments are invited to furnish materials in a similar form for comparison. The weights of postage carried are also of considerable consequence, especially where certain classes of correspondence are exempt from payment.

A still larger question was the *organisation of commercial statistics*, and the *nomenclature of merchandise of an international character transported by railways, canals, &c.*

The sources from which these important classes of facts are obtained are, 1. The reports of commercial houses. 2. The reports of chambers of commerce. 3. The Custom House returns. 4. The reports of railway and canal companies, &c. Of these the third demands the most attention, and to the part of the programme written by M. Thoerner some valuable tables by M. Térékhoff, showing the comparative customs tariffs of Russia, the Zollverein, Austria, France, Belgium, Italy, England, and the United States, are appended. They indicate the units of measure, weight, and value by which the tariffs of each article are fixed in different countries, the specific articles of each tariff and those which are merged in a general classification, and a new system of classification so as to facilitate the comparison of the details of different tariffs.

Much discussion arose on the question how to obtain in the Custom House returns the original country of merchandise in transit, and on the mode of obtaining valuations of goods. In this Section, besides, MM. Thoerner, Block, Vissering, Young, Caignon, Bravo, Meitzen, Horn, Mr. Reader Lack, and our delegates, MM. Hamilton and Levi, took an active part.

The substance of the resolutions, as finally amended, was as follows; the new classification (not alphabetical) to be communicated to the statistical bureaux of different countries for a final analysis.

The values and quantities of exports and imports to be computed on the units of weight, measure, and value, in conformity with the tables adopted by the Congress.

Net weight to be adopted for the calculation of all manufactured articles, gross weight for others. In every deviation from this principle, the tare in which the article is usually exported or imported should be noted separately in the returns.

That the custom house returns should show the original country from whence comes the merchandise in transit across one or more countries before arriving at its destination in all cases where the

transit is by railroad, boat, or otherwise under the custom house control.

The returns of merchandise arriving by sea should distinguish the articles shipped from the original country and from the intermediate ports of any foreign country touched at.

The custom house returns should only be used to furnish information on fiscal subjects, supplementary facts to be obtained from other sources of information; an exception to this rule only to be admitted in articles not subject to duty on exit or entry.

In all cases in which merchandise is not subject to an *ad valorem* duty, every country should, by the means it may deem preferable, determine the actual value, after the system of average values, omitting the export and import duties; for merchandise which varies considerably in price with reference to the places of export and import, the general average price should not be taken for the whole country, but different average prices fixed according to the commercial centres nearest to the principal custom houses of export and import.

That the adoption of the same weight and measure in the declarations made at the custom houses of different countries would greatly facilitate international commerce; simplification and economy of work would thus render more easy the carrying out of the tariff regulations, diminishing the chances of errors in the declarations, and of the penalties incurred for involuntary mistakes.

The Fifth Section was occupied with subjects of *criminal statistics*, on which the Organisation Commission had the benefit of a paper by Dr. Mayr. These questions had already been discussed at different Congresses, but it was thought that the principles, as well as the methods and details, could be further simplified in the forms of schedules.

The propositions accepted by the general assembly were to the effect that it is necessary to introduce a regular and analogous system of registration of the facts in criminal statistics, and the best method is that of individual (*nominatif*) registration; there should be a separate schedule for each charge, and individual schedule of the accused, the former containing all the steps of the criminal process, the latter the characteristic signs of the persons accused; the former to be introduced for all offences, the latter only for the more important. To these recommendations were appended models of the various schedules suggested.

The best method of obtaining information as to *recommittals for crimes and offences*, as affecting the question of increasing penalties, came also under discussion. The system established in France of referring all the charges, first and subsequent, to the place of birth of the accused, recommended at the Congress at Paris, is inapplicable

to certain other countries, especially illustrated in the case of Russia, by the distances of communication and the floating character of parts of the population, and consequently leading to great delays in justice. It seemed more desirable to establish registers in the statistical bureaux of the Minister of Justice for the use of tribunals and the persons concerned, to be printed and published at fixed intervals. These registers should contain an alphabetical list of persons against whom any sentence has been pronounced, the tribunal before which he was condemned, the nature of the offence, and the punishment decreed. The facts required may be those suggested in the forms which accompanied the previous resolutions, though, considering the immense bulk of the registers, it may be a question whether the printed registers should relate to any persons other than those who have been condemned to imprisonment at least. Resolutions, generally expressed, that it was desirable in all countries to establish periodical registers of recommitments to be able to study the question in reference to the regulations of the penitentiary system, were passed recommending also that the question should be further considered at the next Congress.

The Fifth Section had also to consider *the nomenclature of crimes*, on which a very able paper had been prepared by M. Tagantzew.

Resolutions for obtaining the comparative statistics of crime by appointing sub-commissions of eminent jurisconsults to agree first of all upon clear definitions of penal acts, and the penalties attaching thereto in different countries, were passed at the Congresses of Brussels, Vienna, and London; and it was now sought to give a practical application thereto. The proposition was carried that the object of an international nomenclature was to facilitate the comparative study of this branch of statistics in all countries, for which was needed a systematic definition as complete and precise as possible, of each category of crimes according to different legislations, with their subdivisions and the penalties attaching to each, with such classifications as would comprise them all, and with an explanation of the relations which would exist between the statistics of each nation. The methods of proceeding were pointed out in minute detail. The application of the method proposed was shown in the category of crimes against human life, as defined, with the penalties attached in the legislations of France, Belgium, Germany, and Russia.

It was then proposed that a commission should be appointed to examine and correct this model work, with the aid of the jurisconsults and men of theory and practice in each of the States named, and then complete the corrected model by the addition of similar facts for the other States of Europe. Further, that another

commission should be named by the Congress to divide amongst themselves the labour of preparing comparative forms of statistics on the same model for all other sub-divisions of crimes, so that the whole system may be elaborated and prepared in the course of the years 1873 and 1874, to be submitted complete to the next Congress.

The two commissions were named, the first consisting of MM. Yvernes (France), Spassovitch (Russia), and Hilsé (Germany).

The second commission was composed of MM. Abrosoli, de Sterlich, Hammick, Levi, FitzJames, Stevens, Holtzendorff, Mayr, Lahovari, Heimgyllenskiöld, Spassovitch, Tagantzew, Pascuale, Baumhauer, Delmar, and Barnes.

Such was the nature of the work provided for the five Sections, and the conclusions to which they had arrived were approved, with moderate amendments, by the General Assembly. It must be admitted that the subjects discussed were of the highest importance, and that they were practically treated. All who had the privilege of being present at the debates must have been gratified by the good sense, the experience, the science, and the eloquence of the speakers.

The last day, Friday, ^{30th}/_{18th} August, was, in great measure, occupied by cordial invitations for the next meeting, given by M. Keleti on behalf of the Emperor of Austria and King of Hungary, to be held in Buda-Pesth, by Dr. Young, seconded by Mr. Derby and General Gorham on behalf of the United States of America, and by M. Max Wirth and Bodenheimer on behalf of the Swiss Confederation. The question was left to the organisation commission to select the place.

M. Levasseur then, in an eloquent speech—in the course of which he paid a tribute, justly deserved and loudly applauded, to the venerable M. Quetelet, by whose eminent scientific services the study of statistics has taken the rank of a science, and who may be esteemed the founder of these Congresses, to which its rapid progress is due—mainly spoke of the great success of the present meeting, and of the merits of its illustrious President, His Imperial Highness the Grand Duke Constantine. Dr. Engel also alluded to the intellectual character of the discussions, and of the cordiality with which the foreign members had been everywhere received. Dr. Farr added a few eloquent words in grateful acknowledgment of the work which the organisation commission had so successfully performed, and in honour of the Vice-Presidents, Prince Lobanow-Rostovsky, General Greigh, and M. Semenow, who seemed inspired by the same spirit as the illustrious President. M. Meitzen, speaking thanks for the hospitality to Germany, drew a picture of the power of Russia so honourably exerted to extend the benefits of

science and civilisation over her vast extent of territory, and over tribes but newly reclaimed from barbarism; and M. Correnti, in the name of Italy, recalling that we then were where the Roman legions had not penetrated, hoped that the Congress might yet meet in Rome, the capital of ancient civilisation.

His Imperial Highness the Grand Duke Constantine, as President, closed the Congress with a few words of congratulation on the result of their labours. He considered such meetings as one of the most striking features of the age, that men of knowledge and experience, of different ways of thought, should come from the most distant parts of the civilized world to unite on the neutral ground of science and cultivate feelings of mutual esteem, could not but benefit the individuals as well as the nations they represented, whose friendly bonds were thus strengthened and improved. The effect of such reunions on men of science, gaining fresh force from these kindly sentiments, and changing for a time the course of their usual labours, would be to propagate knowledge and advance the end at which they aimed, the search after truth and the progress of humanity.

The Session was then closed.

The success of the Congress, however much it was due to the interest which the Emperor took in it, and to the illustrious President and vice-presidents who had been nominated by him to conduct it, must be attributed, in a great degree, to the indefatigable labours and the ability of His Excellency M. Semenow. In every Section he took part, and his eloquence, theoretical and practical knowledge, tact and sound sense, were shown in every discussion, whilst his courteous conduct as President of the First Section gave a harmony to the proceedings, which seems to have pervaded every other Section.

It is impossible to close this brief summary without recalling the marked hospitality and courtesy with which all the foreign members were received by every class in Russia. The Emperor showed them a munificent hospitality in his palace at Tsarkoé-Selo; Her Imperial Highness the Grand Duchesse Helene had several receptions at her palaces in the city, and at Kamennoi-Ostrof on the Neva. An excursion to Cronstadt, the launch of the magnificent iron-clad "Peter the Great," ending by a visit to Peterhof, occupied a day's repose from the labours of the Congress. The municipal authorities of St. Petersburg, Warsaw, and Moscow placed hotels and carriages at their disposal, and the railways free tickets from the frontiers to St. Petersburg and Moscow. Private associations, the Yacht Club, and the Company of the Iron Foundry of the Neva, offered them noble entertainments. The Russian members of the Congress prepared for them a grand banquet, in the Hall of the

Nobility. Besides these more public honours, private individuals, whose names it would be invidious to mention without mentioning all, vied with each other in unceasing hospitality, attention, and courtesy, the opportunities for which were watched for with never-ending kindness till the moment of departure.

I think the experience of my colleagues will bear me out in thinking that one of the great advantages of these reunions is the formation of friendships amongst men, having the same pursuits, but coming together from all parts of the world, who are thus enabled to benefit by each other's varied and profound experience and new trains of thought, and to give mutual aid to each other in the prosecution of researches of the highest interest to mankind at large. The most distinguishing features of the present meeting are to my mind the organisation of the Permanent Commission, and the arrangements made to carry out the great work projected at the Hague, of compiling a complete body of international statistics.

By these means light will be thrown on every branch of statistical science. All social phenomena of every kind may be investigated by comparisons of the different causes from which they arise, under different conditions, and in countries presenting wide spheres of observations and opposing influences at work. Knowledge will thus be increased, laws of social life eliminated, true scientific inquiries promoted, the work of government simplified, and the progress and prosperity of nations fixed upon sure bases of observation and reason, instead of dangerous experiments or doubtful theories.

STATISTICAL CRITIQUE *on the OPERATION of the BANK CHARTER ACT*
of 1844, and SUGGESTIONS for an IMPROVED SYSTEM of ISSUE.
By ERNEST SEYD.

[Read before the Statistical Society, 17th December, 1872.]

THE subject of the Bank Act of 1844 has always been a favourite theme in this Society, and although it has rarely been treated statistically, yet the Society cannot complain of the lack of variety of opinions under which it has been brought before them.

Of the two parties which stand at the extreme ends of diverging views, the one not only utterly condemns the Bank of England Act and its limit of issue, but recommends the introduction of so-called "free banking." The other upholds and praises the Bank Act, but condemns the public for not knowing how to make proper use of it. All the controversy which has hitherto taken place upon the question lies between these two extremes.

One author modifies the extreme suggestion of "free banking" by proposing that the right of issuing bank notes should be conferred only on joint stock banks. Why should such a privilege be granted to joint stock banks, institutions which, but for the fact of their being composed of more than seven partners, and of their falling under a special law designed for their better control by the public, differ in no way from other corporations, partnerships, or individuals constituting firms? The State cannot grant such general privileges to a class, and in making the proposal its authors altogether ignore the very first principles of legislative duties. But supposing it were carried out, the questions would arise: shall these notes have legal tender rights, involving the responsibility of the State, and forcing it to control the securities of the issuers; or shall they not have legal tender rights; shall their acceptance in payment remain optional? The State cannot act as an inspector or spy of the concerns of a number of joint stock banks, and for the safety of the contract basis and the due legal vindication of the contract, it cannot permit the issue of a general currency which has no legal tender rights. "But," says the proposer of such scheme, "we want this kind of currency principally when there is a crisis and money is scarce, and our country bankers now issue notes without legal tender rights." Now whenever a crisis threatens, the issue of the country bankers, it is curious to notice, contracts rather than expands; the more severe the pressure the more does the country

banker endeavour to cancel his liabilities by calling in his notes, a perfectly natural result, when it is borne in mind that his issue is nothing more than an ordinary promissory note without legal tender force. And any issue of the kind proposed, instead of being sought during a crisis, would be refused, and a *perfect* currency demanded. In ordinary times our present country bankers' issues are no doubt successful as far as the profits of the issuers are concerned; whether they are really useful to public interests as regards their influence on prices in their international relationship, and in other directions, is a matter of doubt with some parties; my own opinion is that all the pleas as to their local importance are fallacious, and that they are mischievous; but this much is certain, that in the event of a crisis they become, like all non-legal tender moneys, absolutely useless. A further or temporary admixture of this kind of currency without legal tender, with the true circulating medium (gold and Bank of England notes) now vested with legal tender rights, could not be borne. Fortunately, the country issues are confined within their own limited spheres; our great national and international financial centre would, by the mere force of a natural law, sweep them aside, together with all other similar issues proposed as remedies by the class of authors referred to.

Another class of reformers propose to take the issue of bank notes from the Bank, and to transfer it to the Government. The State, through the Treasury, is to make the issue, say, partly on bullion, partly on credit. The Government can take in bullion and print notes, receiving and paying away money in exchange for notes; but what can it do with the fiduciary or credit portion of the issue? To whom are these notes to be given, and for what consideration? Can the State purchase consols or discount bills? This question I ask quite independently of the liability of the State to pay the fiduciary notes. The fact is that all issues of bank notes must be brought into direct contact with commercial interests, and no Government can issue a presumably convertible bank note without becoming a banker, liable to all the chances of that business. A few Governments, in distress for money, have issued *inconvertible* notes from their treasury, but they have speedily dropped them, transferring the right of issue to banks. The most notable case of this kind is that of the United States of America, and the issues, under Government inspection, of their national banks. The Government inspects, investigates, and spies into the assets of these banks as rigorously as possible, and so makes itself responsible for their safety. Would such a system suit England? And bear in mind that this system can only be carried on because the American notes are *inconvertible*, and legal tender at the same time; if they were convertible it could not be maintained.

Wilder schemes than these are now and then proposed, the heroic remedy of the issue of 70 millions of bank notes (the amount of our annual imperial taxation), for the purpose of paying taxes, is frequently suggested by social reformers of a certain type. I do not care to notice them; but one idea I may now set forth, for the consideration of those whose mind is not yet made up as to the relative value of a fiduciary bank note issue, compared to an issue based on the precious metals alone.

If it were an absolute truth that a fiduciary issue is as good as a bullion note issue, there would be no doubt in the matter nor need of any controversy; the absolute truth would assert itself with the unerring force of a natural law, in spite of all endeavours to prevent it, and if that were so, if both issues were equal in value, the fiduciary issue would reign supreme, and set aside the use of metallic money. As this has not taken place, as, on the contrary, all attempts to establish a fiduciary issue have either failed, or, where seemingly successful, have been attended with overwhelming evils, we must conclude that such issue is, to say the least, inferior to the one based on metal. The question of degree of inferiority is of less importance, and whatever that may be, it is quite evident that its evil results do not manifest themselves alone in issues wholly fiduciary, but that in some measure they are present also in all issues in which the fiduciary element forms a part.

I make these remarks in order to define the point of view on which I stand, from which all ingenious combinations proposed as to general issues by banks, or a special issue by the State, or kindred issues by way of seignorage on legal tender coin, are dispelled and placed into the category of financial alchemy. The duty of the State in regard to the provision of legal tender coin is simply that of certifying to its value by the dies of the Mint, and to forbid the issue of similar pieces by other parties. The same attitude, neutral in its main principle, must also be maintained in regard to bank note issues, and if the Government gives way to the pleas upon which a paper issue is demanded, it must retain the power of making a contract with one responsible factor whom it can control on behalf of the public, so as to be justified in giving legal force to the issue, without at the same time involving the direct liability of the State. I indicate thereby that I am in favour of our present bank note issue being retained, and altogether undertaken by a single establishment, the Bank of England; and now face the questions: is the present Bank of England issue so constructed that it satisfies the pleas upon which it has been established? does it meet requirements? is it faulty? and can it be improved?

It is needless for me to point out here the conflict of opinions which, in reference to this matter, has raged for years, and the evidence

of the remarkable disturbances in our commercial history since the passing of the Bank Act; it is sufficient to say that in the whole of the controversy I have never met with an *exposé* of the “first principles” upon which this matter is to be decided, and yet such first principles must exist.

The only attempt to bring out first principles is made by those who defend the Act of 1844 by saying: “The Bank Act is perfect in every way—but (and here come their so-called first principles) the public is not good enough for it; our merchants will speculate, they will draw accommodation bills, and get themselves and ourselves into trouble; if the public would only act properly the Bank Act would be a splendid success, and nobody would have reason to complain.” The Pharisee who in his pride set himself so far above the publican is much less to blame than those who pit their system against the whole community and its degree of civilization—who are unable to deal with human nature, unable, therefore, to govern it or to invent a system which will suit human nature. Fancy the prime minister of this country, finding himself in conflict with the British nation, coming forward and saying: “I am not to blame, it is you, the people, who are bad, and not fit to be governed.” And so the defenders of the Bank Act have moralised for years in this strain without improving the public. They have boasted of the convertibility of the note, although we all know by what a contradictory process it has in times of danger been maintained; parliamentary inquiries have taken place, and heavy blue books have been printed thereon. No wonder that all these seemingly authoritative and copious matters should bother the ordinary Englishman; that he should finally shake his head, acknowledging humbly that he is not good enough for the Bank Act. He may wish himself on some other planet with a superior race of beings, and if by chance there should be a similar Bank Act in such higher realms, his report to us on its working would be very desirable.

I think you will agree with me that this line of defence, taken by the admirers of the Bank Act, is in reality its severest condemnation.

Yet bank notes must exist, and must be used. Why and how, that is the point. I shall endeavour, subject to your considerate criticism, here to establish the first principles upon which an issue of bank notes can be conducted; but before I do so, I shall lay before you a closer account of the intention and construction of the Bank Act, together with statistical facts showing how far these intentions have been carried out or not, and the evils which have arisen in connection therewith, so as to prepare the way for “first principles.” And in thus criticising one of your favourite institutions, I trust that you will concede to me the privilege which the

native Englishman enjoys, when, though full of respect for his national greatness and prosperity, he yet feels anxious about some matter of public interest.

The first, and to many persons the most important purpose of the Act of 1844 was to secure the convertibility of the bank note. That this has been accomplished I will allow, but not by strict adherence to the Act; on the contrary, whenever the danger of inconvertibility drew nigh, the suspension of the Act had to be resorted to. There is no special merit in the Act, even including the absurdity of its suspension, for having accomplished this, other equally efficient methods of preserving the bullion basis might have been adopted. Other nations and other national banks have maintained the convertibility and par value of their bank notes as well as ourselves. If during the existence of the Act we had been involved in war on our own soil, like America and France, I question whether we should have maintained the convertibility of the note, especially as we have in thoroughly peaceful times been, at all events, very near to its failure. But I will allow that we have so far succeeded in maintaining the convertibility, and I will go so far as to say that, in the next crisis, especially if we again suspend the Act, we may again succeed in doing so. I say this in order to forestall and render unnecessary any discussion on this point. You will, however, I am sure, generally agree with me in this, that if we issue notes against bullion only, and not against bullion *and* Government securities, the convertibility of the note would be absolutely secure, and that, consequently, the extra issue of 15 millions of notes against Government securities does not improve the convertibility.

The Act further carries out the purpose of placing the purchase and sale of gold bullion upon a firm basis, and the firmness of the valuation which has thereby been established as regards gold is one of the principal means of our success as international bankers. That is the best feature in the system. In its practical working it has lately undergone a slight improvement in the way of greater accuracy. The arrangements made by the Bank for the control of our gold coinage are also admirable.

But in addition to the bullion which the Bank purchases as material for the convertibility of the note, and the arrangements connected with the dealings in the precious metals, the Bank also issues 15 millions (originally 14 millions) of bank notes on securities, not bullion. The whole controversy as regards the Bank Act turns upon this extra issue of 15 millions. The advocates of the bullion basis condemn it as too large and unnecessary, the partisans of the fidu-

ciary system say that it is too small and not elastic enough. Now, I am perfectly well aware that, in talking of Bank of England notes generally, the public in its faith makes little distinction between the bases on which they rest, and seems to expect that everybody should do the like. The investigator, however, must inquire into their origin, and to him the two elements present in the Bank of England issue, viz., the bullion and the Government securities, appear as two distinct matters.

The Bank then, as you are aware, besides the notes issued against bullion, also issues 15 millions against 11,015,100*l.* Government securities, and 3,984,900*l.* other securities. Why is this extra issue made? What are its objects, either for the benefit of the State, or the public, or the Bank? I propose to answer these questions in succession.

The Government, some long time ago, it may be said, owed a debt of 11 millions to the Bank, and not finding it convenient to repay this sum, granted to the Bank the privilege of issuing notes to that amount (and 4 millions more) to be used as money, the debt of 11 millions (and 4 millions other securities) serving as guarantee to the public who hold the notes. Whatever may have been the original necessity of the State, it cannot be said that in its present prosperity it requires to borrow 11 millions of the Bank, and this sum might as well be added to the great national debt. The Government, therefore, at the passing of the Act was not, and is not now, under any necessity to use the issue as a means for borrowing money; it might have long since repaid the sum. The main object in keeping the debt standing was the conception that it would serve as security for the issue of the notes. And here let me at once declare that all the controversy in regard to this matter of the debt of the State to the Bank, the proposed repayment, the paradox of such a security, is, as far as this question of the issue of 15 millions is concerned, quite immaterial. It does not matter in the least whether this debt is booked or held by the Bank in consols, or whether it is repaid to the Bank, who with the money thus obtained might replace this security by substituting some other kind for it, for it does not matter what securities the Bank holds against fiduciary issue, so long as they fall within the same category of safety as the 4 millions "other" securities in the issue department.

The primary object of the extra issue itself, undoubtedly, was that of providing money or supposed money for the public wants. At the time when the Bank Act passed, it had been ascertained that the public had been accustomed to a circulation in their hands of some amount of bank notes, for which an issue of fiduciary notes

to the amount of 14 millions seemed suitable, and the legislature conceded this amount, and fixed it as a limit. Without referring here to the nature of such an issue as combined with bullion, or to the prudence or imprudence of the limit so rigorously fixed, let me dwell upon the point that the *evident and beneficent intention of the law was that of providing the public, through the medium of the Bank, with 15 millions (at first 14) of money beyond that which the nation possessed in coin and coinable bullion, so that the 15 millions should circulate freely, encouraging commerce and industry.* Could the object have been anything else?

If such was the object, I invite you now to look at the returns placed before you of the reserve of bank notes held by the Bank of England, *in its banking department*, during the time the Act has been in existence (see the full returns for the twenty-seven years). You will there find that the greater portion of 15 millions of notes, instead of being in the hands of the public in “circulation,” is in “reserve,” in the banking department of the Bank of England, idle, inviting employment. There is only one instance out of 1,409 when the whole amount was used by the public; a few when it was fully employed within 2 and 3 millions; more when three-quarters or one-half was made available; but in the vast majority of the 1,409 weeks, or twenty-seven years, a comparatively small proportion came into the hands of the public. On many occasions, almost the whole of the sum lay idle in reserve, on several occasions there was even a surplus beyond it. The following table shows what was in the hands of the public:—

TABLE A.—Table showing the Amount of Notes held by the Public in Excess of the Bullion in the Issue Department, Weeks and Amounts from 1st January, 1845, to 31st December, 1871.

The amounts issued above bullion being:—

	£
From 1st September, 1844, to 8th December, 1855.....	14,000,000
„ 8th December, 1855, to 10th July, 1861	14,475,000
„ 10th July, 1861, to 21st February, 1866	14,650,000
„ 21st February, 1866	15,000,000

The amounts used by the public have been:—

1 week between 15 and 16 millions.*	175 weeks between 4 and 5 millions.
5 weeks „ 14 „ 15 „	147 „ 3 „ 4 „
1 week „ 13 „ 14 „	113 „ 2 „ 3 „
11 weeks between 12 „ 13 „	68 „ 1 „ 2 „
18 „ 11 „ 12 „	26 weeks below 1 million.
37 „ 10 „ 11 „	5 „ surplus under 1 „
81 „ 9 „ 10 „	4 „ „ over 1 „
151 „ 8 „ 9 „	1 week „ „ 2 millions.
148 „ 7 „ 8 „	
200 „ 6 „ 7 „	1,409 weeks.
217 „ 5 „ 6 „	

* Special issue of 2,000,000*l.*

Roughly dividing the issue into four portions, it can be said that the public had the advantage of it in circulation during the twenty-seven years as follows:—

For $1\frac{3}{4}$ years of three-quarters of the issue above bullion.

„ 12	„	one-half	„
„ $12\frac{1}{2}$	„	one quarter	„
„ $\frac{3}{4}$	„	none at all.	

The following table shows the highest and lowest point during each year, and the average calculated on each week.

TABLE B.—Table showing the Highest and Lowest Circulation of Bank Notes above Bullion in each Year, and Averages of Circulation and Idle Reserve in the Banking Department.

	Issued above Bullion.	Highest Circulation above Bullion.	Lowest Circulation above Bullion.	Average Week by Week.	Idle Reserve, Week by Week.
	£	£	£	£	£
1845	14,000,000	8,780,000	4,145,000	6,105,000	7,895,000
'46	„	8,887,000	4,153,000	6,123,000	7,877,000
'47	„	12,846,000	5,723,000	9,389,000	4,611,000
'48	„	6,848,000	2,691,000	4,892,000	9,108,000
'49	„	5,889,000	1,518,000	4,045,000	9,955,000
1850	„	4,695,000	1,989,000	3,455,000	10,545,000
'51	„	7,350,000	1,858,000	5,529,000	8,471,000
'52	„	3,887,000	<i>244,650*</i>	1,778,000	12,222,000
'53	„	8,988,000	2,868,000	5,633,000	8,367,000
'54	„	10,099,000	5,647,000	7,464,000	6,536,000
1855	„	9,737,000	2,113,000	6,269,000	7,731,000
'56	14,475,000	11,924,000	7,086,000	9,417,000	4,958,000
'57 {	2,000,000 extra	13,327,000	8,281,000	9,816,000	4,659,000
'58	14,475,000	7,486,000	1,233,000	3,093,000	11,372,000
'59	„	6,120,000	1,125,000	4,046,000	10,429,000
1860	„	9,552,000	5,151,000	6,768,000	7,707,000
'61 {	14,650,000	9,736,000	4,628,000	7,844,000	6,806,000
'62	„	6,538,000	4,168,000	5,320,000	9,330,000
'63	„	8,846,000	5,172,000	6,897,000	7,753,000
'64	„	9,757,000	5,692,000	7,819,000	6,831,000
1865	„	10,356,000	5,119,000	7,387,000	7,263,000
'66	15,000,000	14,584,000	3,625,000	9,189,000	5,811,000
'67	„	5,183,000	170,000	3,236,000	11,764,000
'68	„	6,502,000	2,009,000	4,255,000	10,745,000
'69	„	8,495,000	3,268,000	5,679,000	9,321,000
1870	„	6,473,000	814,000	3,449,000	11,551,000
'71	„	7,713,000	<i>2,106,400*</i>	1,530,000	13,470,000

* The two items in 1852 and 1871 in *italics* being surplus above the whole issue.

The average of the whole being 5,794,000*l.*, i.e., that being the amount of which, out of the 14 and 15 millions assigned, the public has had the use during the existence of the Bank Act. This, of course, includes the years of very high interest and those of crises, during which abnormal times the fiduciary circulation was exceptionally large, as you see by Table A.

The following statement shows the average of notes above bullion in circulation at respective rates of interest:—

2 to 2½ per Cent.	3 per Cent.	3½ to 4½ per Cent.	5 per Cent.	5½ to 8 per Cent.	9 to 10 per Cent.
315 weeks	318 weeks	315 weeks	140 weeks	230 weeks	31 weeks
£3,500,000	£4,568,000	£6,043,000	£7,694,000	£8,716,000	£11,277,000

The average for the	27 years is	£ 5,794,000
If the exceptional times of crises and high } interest from 5½ to 10 per cent. be deducted, viz., 261 weeks or 5 years, the average would } be for the remainder	22 ,,	5,000,000
If the interest up to 4½ per cent. be deemed the } normal state, the 140 weeks at 5 per cent. } deducted, there would remain an average for.... }	18 ,,	4,630,000
Whilst from 2 to 3 per cent., representing 693 } weeks, or nearly one-half of the whole time, the } average would be for..... }	13½ ,,	3,987,000

These statements show to what extent the public has profited by the fiduciary issue of 14 to 15 millions by way of circulation. I am aware that some of my hearers are preparing now to urge that the balances thus lying idle at the Bank constitute the reserve, that they are available, that they arise from this and that and the other cause. I beg of them not to forestall me here, for I will deal with all these matters; the simple question which I have so far discussed is, that if the legislature intended that the 14 to 15 millions of extra issue should *circulate* for the benefit of the public, how has this intention been carried out? The figures given speak for themselves.

I think you will agree with me that the balances held as reserve by the Bank, and not in circulation, stand on the same ground as hoarded money—utterly inactive. The facts before us prove what their “availability” amounts to, and even hoarded money is “available” when it meets with proper demand. I shall presently again allude to this so-called “available” character of the reserves; but as far as the practical use in the hands of the community for the current transactions of commerce is concerned, the Bank might as well hold securities or merchandise, or no reserve at all.

In presenting the matter to you in this light, the admirers of the Bank Act may feel disposed to charge me with having forgotten their distinction between the issue department and the banking department; the 15 millions of notes emanating from the former, the reserve accumulating in the latter. They maintain, as you are aware, that the issue department is so entirely separated from the banking as to constitute separate interests. Yet, as we all know, the stockholders of the Bank alone are responsible for the issue, and receive the profit arising therefrom. The State, it is true, owes a debt of 11 millions to the Bank, it also taxes the issue by a certain sum per annum, and it gives the privilege of legal tender to the notes, but it is in no way responsible for the issue department. Indeed, the debt of 11 millions might be converted into consols to be held by the Bank, or the Bank might hold other securities, without any reference whatsoever to the State. The only monetary connection between State and Bank then remaining would be the annual contribution paid by the latter to the Exchequer, and the nature of this connection is none other than that of ordinary licences or duties in taxation. The right of legal tender which the Government has granted to the Bank of England note has nothing to do with the responsibility of the State, or the accountancy at the Bank. The whole weight of the issue department rests upon the shoulders of the Bank itself; and as far as *this question of the amount of notes in the hands of the public is concerned, it matters not a whit to them whether the idle reserve be held in the issue department, or is held in the banking department*, in the left or in the right hand of the Bank—in either case it is not in circulation.

I here introduce and concede the alleged distinction between the issue and banking departments, for it is not only convenient for an investigation of the accounts which are given in that form, but later on I may show also that this same distinction between the departments, or rather the automatic character of the one, can be maintained, as a matter of separate account in connection with an improved bank-note issue.

Glancing now again at the amounts of the fiduciary issue in the hands of the public, and, by way of contrast, at the large reserves in the Bank, the question arises, how do these accumulate? The suggestion nearest at hand is that they are money which the public, or rather the customers of the Bank, have paid in; and if the reserve is small, it follows that the reduction should have been caused by money withdrawn. That means, in other words: an increase in the deposits at the Bank must bring about a corresponding increase in the reserve, and *vice versâ*. Now if you look at the column of "Total deposits and bills" in the general returns (under which I have united the three items of liabilities—public deposits, private deposits, and

seven days and other bills, as money liabilities of the banking department), and at the column of reserve of notes, you will find that this is but very partially the case. The variations in the deposits are caused chiefly by the public accounts (the most unsteady up to 1871), the periodical payments of taxes, dividends on the debt, deductions from the "rest" of the Bank, &c., and if there are numerous cases where an increase or decrease in the deposits means a corresponding effect in the reserve, there are more where this is the case but very slightly, and many where the contrary takes place. The absorption of any sudden increase is met by the temporary investment in or advance on Government and other securities of casual surplus. These movements, with the demand at harvest time, &c., represent but the current transactions within certain reasonable limits, and in accordance with the progressive increase, year by year, of the business. But what we must look to, in order to verify the proposition that the increase or decrease in reserve is tantamount to increase or decrease of deposits by the public, are the larger movements under which at different times the reserve is either insignificant or redundant;—and in doing so, it must be strictly borne in mind that, according to the theory of the separation between issue and banking department, the presence of bullion in the former is an element which can be entirely separated from the latter. For the Bank assumes that its banking department stands on precisely the same ground as every joint stock bank or private banker, the action of the issue department being merely automatic for the sake of the public, of which the banking department is but a member. In the general returns for the twenty-seven years, you will find numerous disproportions between deposits and reserve, in flagrant contradiction with the theory that the latter declines and falls with the former.

Between the 19th December, 1845 and 10th January, 1846, there is a difference of 100,000*l.* in the reserve, but one of 8 millions in deposits. On the 24th July, 1847, the reserve is 1 million, the deposits over 14; on the 5th of August, 1848, the reserve is 8 millions, with 14 millions deposits. Look at 1853-54, and all subsequent years, and you will find still greater variations, not only in the same years, but more so in periods of two, three, or more years. In December, 1857, the reserve is near 1 million, the deposits being 19 millions; four months later, with the same deposits, the reserve exceeds 10 millions. Still more flagrant in the years 1866-67, when with deposits at 27 millions, the reserve is at one time under half-a-million, at another above 14 millions. This independence in the relationship between the reserve (or rather the issue) and the deposits becomes all the more extraordinary at times when the so-called pressure for money brings money to the institution, instead of the contrary, as might be expected. In the table which I now

lay before you, I have selected in each half-year the highest and lowest state of the reserve, and placed them in juxtaposition with the deposits of the same week. I have avoided to include the last and first weeks of each half-year, for these exhibit the most abnormal results; for reasons well known, I exclude them so as to escape the charge of forcing my case. There are also numerous instances where the deposits are much larger proportionately than those resulting from the comparison with high and low reserves.

TABLE C.—*Table showing the Highest and Lowest State of the Reserve of each Half-Year from 1845 to 1871 inclusive (avoiding the extreme Weeks at the End and Beginning of each Half-Year), with Bullion, Deposits, and Percentage of Idle Deposits or Idle Fiduciary Issue.*

[000's omitted.]

Date.	Bullion.	Reserve of Notes.	Deposits and Bills.	Difference.	Percentage of Idle Deposits.	Percentage of Idle Fiduciary Notes.
1845.	£	£	£	£		
25th Jan.	14,128,	7,418,	12,650,	5,232,	58	53
14th June	15,917,	9,857,	17,552,	7,695,	56	70
13th Sept.	14,790,	8,430,	16,600,	8,170,	51	60
1st Nov.	13,276,	5,219,	14,693,	9,474,	36	38
1846.						
31st Jan.	12,587,	5,112,	22,413,	17,301,	23	37
13th June	14,603,	9,011,	22,918,	13,807,	40	64
12th Sept.	15,864,	9,846,	17,197,	7,351,	57	70
31st Oct.	14,309,	6,934,	14,399,	7,465,	48	50
1847.						
16th Jan.	13,225,	6,545,	16,372,	9,827,	40	47
17th April	8,801,	2,558,	13,925,	11,367,	19	18
23rd Oct.	7,865,	1,154,	14,293,	13,139,	8	8
18th Dec.	11,309,	7,551,	18,227,	10,676,	41	54
1848.						
15th Jan.	12,247,	7,152,	15,913,	8,761,	45	51
18th March....	14,414,	10,967,	17,600,	6,633,	62	78
5th Aug.	12,690,	7,998,	13,966,	5,986,	57	57
16th Dec.	13,982,	11,246,	18,123,	6,877,	62	80
1849.						
24th March....	14,582,	10,953,	18,065,	7,113,	61	78
5th May	13,495,	8,281,	15,705,	7,424,	53	59
21st July	13,834,	8,111,	15,218,	7,107,	53	58
22nd Dec.	16,284,	12,481,	20,801,	8,320,	60	89
1850.						
23rd March....	16,472,	11,854,	20,221,	8,367,	59	85
20th April	15,873,	9,537,	16,732,	7,195,	57	67

TABLE C.—*Highest and Lowest State of Reserve of each Half-Year—Contd.*

[000's omitted.]

Date.	Bullion.	Reserve of Notes.	Deposits and Bills.	Difference.	Percentage of Idle Deposits.	Percentage of Idle Fiduciary Notes.
1850.	£	£	£	£		
21st Sept.	16,176,	11,313,	20,431,	9,118,	55	80
19th Oct.	15,406,	9,304,	17,219,	7,915,	54	65
1851.						
22nd March....	13,715,	9,221,	18,685,	9,464,	49	64
22nd April	12,733,	6,793,	15,203,	8,410,	45	49
19th July	13,283,	6,649,	14,723,	8,073,	45	48
13th Dec.	16,279,	11,390,	19,045,	7,655,	60	81
1852.						
17th Jan.	17,151,	10,112,	17,489,	7,377,	58	72
20th March....	19,175,	13,195,	20,882,	7,687,	63	94
25th Sept.	21,132,	13,619,	22,044,	8,425,	58	97
30th Oct.	20,767,	10,954,	18,937,	7,983,	58	—
1853.						
19th March....	18,596,	11,132,	22,430,	11,298,	50	78
7th May	17,744,	8,274,	17,885,	9,611,	46	59
15th Oct.	14,679,	5,012,	17,870,	12,858,	28	36
17th Dec.	14,729,	8,124,	22,376,	14,252,	36	58
1854.						
18th Feb.	15,513,	7,858,	15,704,	7,846,	50	56
6th May	11,874,	3,900,	14,191,	10,291,	28	28
14th Oct.	12,333,	5,755,	14,851,	9,096,	38	41
16th Dec.	13,369,	8,330,	16,739,	8,409,	50	59
1855.						
20th Jan.	11,509,	5,463,	14,138,	8,675,	39	39
16th June	17,350,	11,814,	19,929,	8,115,	59	84
18th Aug.	15,506,	9,229,	19,670,	10,441,	47	66
27th Oct.	10,689,	4,262,	16,007,	11,745,	27	30
1856.						
3rd May	9,181,	3,430,	15,496,	12,066,	22	27
14th June	11,437,	6,678,	15,105,	8,427,	44	46
23rd Aug.	11,751,	6,287,	15,626,	9,339,	40	43
18th Oct.	9,231,	2,550,	15,506,	12,957,	16	18
1857.						
11th April	8,321,	3,044,	16,314,	13,270,	18	21
13th June	10,221,	5,924,	17,730,	11,806,	33	41
12th Sept.	10,592,	6,194,	17,622,	11,428,	35	43
11th Nov.	6,666,	957,	19,133,	18,176,	5	7

TABLE C.—*Highest and Lowest State of Reserve of each Half-Year—Contd.*

[000's omitted.]

Date.	Bullion.	Reserve of Notes.	Deposits and Bills.	Difference.	Percentage of Idle Deposits.	Percentage of Idle Fiduciary Notes.
1858.	£	£	£	£		
20th Jan.....	13,764,	8,199,	22,289,	14,090,	37	57
24th March....	17,845,	13,013,	22,263,	9,250,	58	90
4th Aug.	16,659,	10,317,	19,207,	8,890,	54	72
15th Dec.	18,377,	13,106,	22,896,	8,790,	62	90
1859.						
16th March....	19,295,	13,349,	23,260,	9,911,	57	92
4th May	16,571,	8,790,	22,216,	13,426,	39	61
28th Sept.	16,916,	10,185,	23,188,	12,003,	44	70
19th Oct.	16,368,	8,355,	20,445,	12,090,	40	58
1860.						
11th April	13,914,	4,922,	21,155,	16,233,	23	34
13th June	15,434,	8,942,	21,499,	12,557,	42	62
19th Sept.	15,598,	9,215,	20,897,	11,682,	44	64
14th Nov.	12,532,	6,338,	19,186,	12,848,	33	44
1861.						
16th Jan.....	11,004,	5,081,	17,871,	12,790,	28	35
20th March....	11,829,	7,453,	20,253,	12,800,	37	52
17th July	10,711,	4,913,	16,913,	12,000,	29	34
11th Dec.	14,230,	9,378,	19,759,	10,381,	47	64
1862.						
19th March....	15,671,	10,451,	21,965,	11,514,	47	71
11th June	14,238,	8,195,	22,618,	14,423,	36	55
24th Sept.	16,333,	10,482,	23,892,	13,410,	44	71
5th Nov.	14,561,	8,111,	22,030,	13,919,	37	55
1863.						
28th Jan.....	12,737,	7,206,	20,501,	12,295,	40	49
25th Feb.	13,720,	9,253,	20,967,	11,714,	44	63
16th Sept.	14,684,	8,560,	27,570,	13,010,	40	58
4th Nov.	13,194,	5,803,	19,670,	13,867,	29	40
1864.						
23rd March....	13,702,	8,495,	22,831,	14,336,	37	59
4th May	11,778,	4,944,	19,821,	14,877,	24	34
3rd Aug.	12,171,	4,892,	19,236,	14,344,	25	34
14th Dec.	13,354,	8,825,	19,920,	11,095,	44	60
1865.						
18th Jan.....	13,411,	7,350,	19,357,	12,007,	38	50
23rd March....	14,454,	9,530,	24,206,	14,676,	40	65

TABLE C.—*Highest and Lowest State of Reserve of each Half-Year—Contd.*

[000's omitted.]

Date.	Bullion.	Reserve of Notes.	Deposits and Bills.	Difference.	Percentage of Idle Deposits.	Percentage of Idle Fiduciary Notes.
1865.	£	£	£	£		
11th Oct.....	11,956,	4,294,	21,284,	16,990,	20	30
29th Nov.	13,348,	7,776,	19,509,	11,733,	40	53
1866.						
21st March....	13,554,	7,918,	19,700,	11,782,	40	53
30th May	11,434,	415,	27,199,	26,784,	1½	2¾
1st Aug.	12,932,	2,412,	21,644,	19,232,	11	16
12th Dec.	17,497,	10,403,	26,255,	15,852,	40	69
1867.						
8th May	17,963,	9,816,	25,399,	15,583,	39	65
12th June	20,181,	12,413,	27,428,	15,105,	45	83
25th Sept.	23,237,	14,829,	27,823,	12,994,	53	99
6th Nov.	21,217,	11,610,	24,791,	13,181,	47	78
1868.						
29th Jan.	21,203,	12,728,	26,676,	13,948,	48	85
6th May	19,234,	9,779,	25,809,	16,030,	38	65
29th July	20,784,	11,422,	25,454,	14,032,	45	77
2nd Dec.	17,007,	8,497,	24,223,	15,726,	35	57
1869.						
5th May	15,510,	6,504,	21,496,	14,992,	30	45
16th June	18,043,	10,465,	25,040,	14,575,	42	70
25th Aug.	19,999,	11,731,	22,955,	11,224,	51	78
3rd Nov.	17,600,	8,604,	21,617,	13,013,	40	58
1870.						
4th May	18,701,	10,026,	25,060,	15,034,	40	67
15th June	19,917,	12,313,	28,876,	16,563,	42	81
3rd Aug.	17,957,	8,527,	27,308,	18,781,	31	57
14th Dec.	22,021,	14,185,	26,388,	12,203,	54	95
1871.						
12th April	21,541,	12,340,	29,921,	17,580,	41	82
14th June	25,135,	16,418,	29,042,	12,624,	56	109
26th July	26,655,	16,620,	32,269,	15,649,	51	111
11th Oct.....	18,394,	7,286,	27,155,	19,869,	27	49

A further proof that the surplus reserves have little connection with the public may be drawn from the bankers' balances. The bankers are the great factors in whose hands any surplus money

would collect and flow into the Bank; but, if you glance at the column of bankers' balances in the general Bank statements appended (which unfortunately only go as far as 1857), you will find that the variations between them cannot have any important bearing on the matter, and that they often have a quite contrary effect, *i.e.*, they increase, when the reserve is dangerously small.

The abnormal conditions in which the bank note reserve is so often placed may further be ascribed to the variations in the bullion at the Bank. I contend that by the theory which maintains the present bank note issue, *viz.* that of the admixture of a fixed fiduciary issue with bullion, there should be no reference to bullion, as far as the banking department and its reserve is concerned. The separation between the one and the other department implies that the banking department uses "the money" as constituting an indivisible whole. It does not acknowledge the inferiority of the fiduciary portion: on the contrary, it gives it precedence as the original issue, as the basis. Now, if that were correct, and if the 15 millions form an integral part of the 25 to 35 millions of notes issued, and consequently also of the 100 to 120 millions of metallic money in circulation, the demand for money should be regulated by the ordinary means of raising and lowering the rate of interest in some proportion to the actual amount asked for at the Bank as a percentage on the total of 120 to 150 millions in the country, and the store of bullion of the Bank would be of less importance.

But the view is not correct; and, whatever may be the value of the boast as to the independence of the banking from the issue department, the Bank directors cannot, as bankers, apply the ordinary rule as to interest. They must also watch the issue department, wherein a drain of bullion, which represents but a small percentage on the whole metallic wealth of the country, is a large percentage on that stored at the Bank. So, in addition to the necessity of raising or lowering the rate for what we may call ordinary monetary movements in banking, they must make extra efforts, for the sake of the issue, in a double or fourfold measure. Hence the nervous susceptibility of our money market, the extreme spasmodic movements, the consequent exhaustion and flatness, and the large useless reserve of notes.

A reference to Table C shows, under the head of "Bullion," the sums in the issue department at the periods of low and high reserve indicated. If you except the years 1847, 1857, 1866, when the Bank Act was turned upside down, you will find that the variations in the reserve of notes correspond much better with the bullion reserve—that when the latter decreases there is more issue of notes, and *vice versa*. Nevertheless, the rule shows large divergences, the cause of which is the varying supply of securities in which the Bank finds

itself able or unable to invest—a subject to which I shall presently allude.

The fact that our bullion reserve stands in much better relationship to the momentary condition of commerce and its progressive increase with the prosperity of the country, would seem complimentary to the system. In reality the compliment is due to the directors, whose instinctive wisdom has applied heroic remedies, irrespective of their bad influence on other legitimate interests, and who have succeeded somehow to maintain this bullion reserve, such as it has been at times. The disease requiring these rough heroic measures lies in the old misconception that a fiduciary issue is as good as the pure metallic ore. *There are people who actually assert that the surplus of notes in the Bank is due to the increase in bullion, and not to the extra issue. In their eyes the bullion is the scum of our monetary system.* Common sense must repudiate this notion; the highest logical reasoning would dispose of this aberration of thought at once. But, if we admitted the foolish claim that the fiduciary issue thus has precedence over the increase in bullion, we can answer, “The matter is as broad as it is long, “the 15 millions themselves either become superfluous, or, through “their presence, they place so much bullion in that position.”

The allegation may be made that if the fixed fiduciary issue did not exist, that is, if the issue were a pure bullion one, there would be the same kind of plethora from time to time, and the same abnormal idle reserves. Unfortunately this country has never tried the pure bullion basis, so that statistics might refute this allegation; but as a matter of fact the state of the note reserve at all times shows that bullion is never in surplus. In 1870 only, from the 7th June to 26th July, there is a surplus of bullion, owing to the exceptional import of gold from France after the war. The case of absolute idleness of metallic money has otherwise been unknown. A lowering of the rate of interest will always give it employment, and although a sudden plethora may require days and weeks for absorption, it will not, like in the case of fiduciary notes, take months and years before use is found for it. The law of exchanges, the great clearing system involved in “arbitrations” of exchanges, rules the equalisation of the value and the stores of solid money with almost mathematical certainty, and makes a permanent surplus of solid international means an impossibility. Unfortunately we do not well understand and appreciate these laws in our banking practice, and our bankers, confining themselves to local national claims, neglect the opportunity of holding and profiting from claims on foreign countries; so that England, the great international trader and banker, holds but a one-sided position in the great system of claims and counter-claims. Independently, however, of the principles

of adjustment which a better policy in international trade would turn to account, if any more or less permanent surplus of metallic money were to arise *it would be absorbed by the rise in the prices of commodities, and thus disappear*. Anybody acquainted with the first elements of the theory of prices must admit this. A permanent, or even a more or less permanent, accumulation of solid money, capable of giving an average, becomes an impossibility; the law of prices would absorb it with unfailing certainty, even supposing that the inland intercourse of the country stood entirely apart from the international intercourse.

The fiduciary element has no relationship to international trade, and, whatever value it may be supposed to have in reference to local intercourse, it brings international and national commerce into continual conflict. As far as the British public (which has received so little benefit from it) is concerned, the fiduciary issue of 15 millions might as well be abolished. There have been periods when the variations in bullion exceeded the average of issue, and longer periods of almost total idleness of the sum, tantamount to a practical abolition, and no inconvenience was felt. If it were finally abolished, you will concede to me that, to commence with, all danger of "inconvertibility" of the note, for which we now make such sacrifices, would cease for ever.

I think that I have pointed out to you the slender connection between the fiduciary note issue and the public, it remains for me only to dispose of one other suggestion connected therewith. It may be said: True, the bank note reserve is generally unused and large, but it is *available*, and in times of great pressure it is so used. A reference to the years 1857 and 1866, notably, will show that at such times it is not the note issue which comes to the rescue, but the depositors; and, paradoxical as it may seem, the depositors, at their risk, save both the bank and the note issue.

If, then, the object of the Act, that of benefiting the public by the issue of 15 millions fiduciary notes, has substantially failed, what other object remains? The only other object could be a supposed benefit or monopoly in favour of the Bank itself. Now I utterly repudiate the suggestion that, at the charge of commerce or anything else, the legislature ever intended to confer a privilege of this nature; but let us suppose, that though not intentionally, such were the consequences of the arrangement (a very natural suggestion, for "when one loses, the other wins," it is said). An examination of the results will show the truth of the rule that in matters of general commercial intercourse an identity of interest alone will bring profit to both, by the contrary both will suffer.

Let us therefore start the proposition, “the issue is useful and profitable to the Bank, both as reserve and as investment.”

There are two purposes for which a banker covets a reserve. The first is that of being able to accommodate his customers. Now, if the 15 millions of issue are serviceable for this purpose, the figures given before, as regards the extent to which that issue has been used by the customers of the Bank, will enlighten you. The banking department finds it impossible to move the reserves but within the narrow limits shown, or by the uncontrollable force of panic and confusion. Here the lover of the separation of the issue department from the banking department will smile again in his wisdom and say, “But the banking department has received the 15 millions of notes and invested them, the surplus of notes is quite another thing.” *That is to say, he wants to make out that the 15 millions of notes are gone, that they are involved in the general business, and that the “reserve” is but the consequence of the notes returned to the Bank by deposits.* I have shown the want of connection between the issue and deposits, *nevertheless it suits me*, for the present to throw the onus of the idle surplus on the deposits. Taking, then, his view, we find that the banking department has at its disposal 15 millions of notes *plus* the deposits of its customers to do business with. The first being invested and gone, the deposits have their turn.

Look now at the general returns, viz., the deposits and the reserves supposed to arise from their plethora, and notice how very large a portion of the former would be idle. In Table C you will find column headed “Difference.” The use of this will now appear. If precedence is given to the 15 millions as invested and disposed of, the difference between the reserve of notes and the amount of deposits shows the sums which the Bank has been able to employ out of the deposits, and, comparing them with the deposits, the balances being idle, you find that these range from 63 per cent. downwards, the average of the whole twenty-seven years giving $42\frac{1}{2}$ per cent. of idle deposits. If the abnormal times of crises, when nearly all the deposits are used at extra high rates of interest, are deducted therefrom, and calculated over the whole of each week, the result is an average of $51\frac{1}{2}$ per cent. of unused deposits.

Is this right and proper? Separate the question for a moment from that of the safety reserve of the Bank, which I shall presently consider. The banking department, it is pretended again, is independent of the issue, as a banker—so say the advocates of the Act—it stands upon the precise footing as all other banks, and may use its deposits as it pleases. But can any banking concern be conducted when, as is thus frequently the case with the Bank of England, more than half of the deposits are idle? That the Bank does

not leave them uninvested as a matter of choice we all know, for it tempts commerce to use them by lowering the rate of interest, at times to an extremely low figure, yet all in vain. And the fact that the Bank pays no interest on deposits does not concern the trade of the country, which requires banking capital. The great principle in every banking system is that the funds which, either as accumulated wealth or as average of balances, are placed in a bank, should, within reasonably safe limits, be used for the development of business; yet here we find that this cannot be done, excepting in the most spasmodic manner. The wealth and strength of the country represented by these deposits, the fruits of our economy and industry, seems half wasted when thus brought into competition with the fiduciary issue. I must leave you to judge which of the two is the more worthy of consideration.

The last column in Table C, headed "Percentage of Idle Notes," proceeds upon my assumption, that the *deposits have precedence*, and that the burden of idleness is thrown on the fiduciary issue, *like an incurable disease*, cheating us into the belief that these idle notes constitute a reserve.

A striking proof of the disadvantages under which the Bank suffers by this hallucination is furnished by the discount business of the Bank. You are no doubt under the impression that the Bank of England, as the great centre of the monetary power of the country, the leader in the rate of discount, does an enormous discount business, and holds in hand the "cream of the cream" of all that is fine in our gigantic system of commercial intercourse at home and with all parts of the world. In the general returns for the years 1845 to 1857 (unfortunately the returns only go so far), under the head "Bills discounted," you will find that there were times when the Bank held no more than two millions of such bills.

The columns of Table D, which I submit, contain—1st, the total banking funds or liabilities of the banking department, viz., capital, rest, deposit, and bills; 2ndly, deposits and bills separately; 3rdly, the note reserve; 4thly, the investments in Government securities; 5thly, the other securities; and in the sixth and seventh columns the bills discounted and temporary advances. The table starts with the highest and lowest amounts of bills discounted in each year, and gives the corresponding items under the other columns. The amounts, which, under the head of bills discounted, appear large, are exceptional, they would seem to make the average larger; but a reference to the general tables of the Bank returns will show you, notably during the years 1848 to 1854, that the smaller sums are in the greater majority.

TABLE D.—Table showing the Amount of Total Banking Funds and Bills Discounted and Temporary Advances, &c., from 1845 to 1857 (the Half-Yearly Weeks avoided).

[000's omitted.]

Date.	Capital, Res. and Total Funds.	Deposits and Bills.	Note Reserve.	Government Securities.	Other Securities.	Bills Discounted.	Temporary Advances.	Percentage to Resources of Bills Discounted and Temporary Advances.
1845.	£	£	£	£	£	£	£	
1st Feb.....	30,502,	12,650,	7,642,	13,541,	8,652,	2,030,	1,175,	10½
20th Dec.....	36,858,	19,083,	6,768,	13,201,	16,329,	9,561,	1,064,	27
1846.								
28th Feb.....	44,133,	25,891,	6,994,	13,136,	23,242,	13,137,	4,142,	39
12th Sept....	35,618,	17,197,	9,846,	12,961,	12,321,	5,568,	560,	17
1847.								
9th Jan.....	34,693,	16,620,	6,715,	12,757,	14,464,	7,490,	970,	24½
13th Oct.....	32,629,	14,538,	1,176,	10,613,	20,409,	12,738,	1,728,	44½
1848.								
15th Jan.....	34,187,	15,903,	7,152,	11,203,	15,254,	7,734,	1,793,	28
9th Dec.....	35,559,	17,631,	10,771,	13,329,	10,668,	3,182,	1,109,	15
1849.								
20th Jan.....	34,564,	16,529,	9,641,	13,621,	10,522,	3,236,	919,	12
29th Nov....	36,380,	18,663,	11,571,	14,338,	9,660,	2,308,	591,	8
1850.								
25th May....	35,672,	18,052,	10,884,	14,316,	9,697,	2,207,	656,	8
7th Dec.....	38,186,	20,540,	10,642,	14,228,	12,722,	3,695,	1,740,	14
1851.								
3rd May....	33,134,	15,457,	6,957,	14,125,	11,441,	3,855,	680,	14
4th Oct.....	37,622,	19,460,	8,958,	13,464,	14,624,	5,883,	1,668,	20
1852.								
17th Jan.....	35,344,	17,489,	10,112,	13,269,	11,388,	3,569,	622,	12
11th Sept....	39,113,	21,009,	13,263,	14,189,	11,116,	2,674,	284,	7½
1853.								
30th July....	34,190,	16,388,	7,970,	13,337,	12,466,	4,525,	228,	14
15th Oct.....	35,484,	17,870,	5,012,	12,455,	17,425,	9,116,	319,	26½
1854.								
11th Mar....	33,184,	14,913,	7,626,	11,747,	13,054,	4,515,	178,	14
10th June	32,238,	14,397,	5,667,	10,024,	15,799,	7,488,	496,	25
1855.								
16th June	37,605,	19,929,	11,814,	12,681,	12,399,	3,614,	235,	29
20th Oct.....	34,283,	16,569,	4,310,	10,635,	18,789,	9,054,	811,	29
1856.								
26th July....	33,233,	15,318,	5,803,	13,713,	13,094,	3,761,	938,	14
15th Nov....	33,741,	15,933,	3,606,	10,457,	19,054,	9,789,	632,	31
1857.								
10th Jan.....	33,083,	15,275,	4,603,	11,513,	16,342,	5,833,	1,978,	23½
2nd Dec....	39,362,	21,349,	2,268,	5,441,	31,191,	17,788,	3,215,	53½

Note.—The reserve of coin is left out.

The table shows that, with banking resources ranging from 30 to 40 millions sterling, the bills discounted frequently fall as low as 2 to 3 millions. In the column "Percentage to resources of bills discounted and temporary advances," you find the proportions of bills and advances thereon which have been so employed. They range from $7\frac{1}{2}$ per cent. to $53\frac{1}{2}$ per cent., the latter being the extraordinary moment in December, 1857. The average is $21\frac{1}{2}$ per cent., but this includes the two short crises of 1847 and 1857, which, when deducted, leave an average of 17 per cent. During more than one-half of the entire time the average is but $12\frac{1}{2}$ per cent. That is to say, if by "Bills discounted and temporary advances" are meant dealings in those instruments of exchange which form the life and soul of our commerce, with advances thereon, there are periods stretching over several years in which but one-eighth of the banking resources of the great centre are so engaged. But I am justified in going much farther than I have done in this table. The Bank's discount business can be divided into two categories, the one being that for customers with regular current accounts, the other that connected with the general market, through less regular accounts; the former, in which the regular business at branches is included, may be represented by averages of from 2 to 4 millions, and if these be deducted from the percentages given in Table D, it will appear that there are times when the Bank is, for many months together, altogether severed from the general market, so that the whole average is but 10 per cent., and nothing for about one-half the time. Bearing in mind the original intention of the issue of 15 millions, its great resources, and its natural position, the Bank has no right to refuse such fine discount business on capricious excuses, nor does it do so when the market suits it. It is said that since 1866 there have been more bills, more discount on the average, but an increase of 3 or 4 millions even would not much affect the principle of irregularity. Yet lately the proposition was started that the Bank should give up discounting, an indication of the state of doubt and demoralisation into which we have fallen in the controversy. (After 1857 the Bank ceased to make temporary advances, for reasons which were then given: in 1871 they were resumed. It is much to be regretted that the returns do not continue, so as to show us what the Bank has done since, especially in 1865, 1866, and shortly after; as also in 1870-71.)

In general the overwhelming proportion of the Bank's funds is invested in Government securities and in "other securities," not commercial bills and temporary advances. The business of investing in Government securities (and these securities in the banking department are independent of those in the issue), railway, colonial and other securities of that kind, is a very simple

one, and hardly requires a large organisation by way of a bank. It is rather the business of the capitalist, not that of the banker. I am far from saying that a banker should never make use of Government stocks of any kind as an investment; indeed he must invest any surplus money in them, and thus maintain a certain percentage of reserve; but they should not be the principal investment, if only for the reason that they vary in price and cannot always be sold without loss. Bills, however, are not subject to variations in price, they are securities continually absorbing and reproducing money by a self-acting process.

The Bank of France, before the war, held 39 millions sterling of bills, and, although the war and sieges intervened, they were all paid, the loss being about one-quarter per cent. The trade of France is not one-half of ours, the Bank of France has no monopoly, for the banks and bankers of Paris and the large towns are comparatively as powerful as our own other joint stock banks and bankers. Nor is the Bank of France compelled, as is erroneously supposed, to discount all bills with three signatures, it simply rejects those without that number, and has full liberty to do as it pleases. Examine the accounts of the Bank of France, or that of Prussia, and you will find that their chief investments are in commercial bills, the true banking security. The Bank of Prussia, on "Lombard" business, *i.e.*, advances on Government securities, railways, &c., charges 1 per cent. above the bank rate. Look at our own banks, bankers and discount companies, several of them hold more than double as much in bills as the Bank of England, the whole aggregate does not probably fall short of 200 millions sterling.

It would almost appear as if our great Bank of England had lost the power of acting upon the principle that good bills are the most valuable, the most legitimate, the most reproductive and equalising security for banking purposes. At one time, or rather for a length of time, it holds between 2 or 3 millions sterling, at another time (1857) it holds 20 millions, as if our trade had suddenly increased eight-fold, and *vice versâ*. Why this irregularity? why cannot the Bank, claiming the total independence of the banking department, at all events keep some kind of regular percentage share in the business of the country, especially as it determines the rate of discount? I am far from proposing that the Bank should only deal in bills (upon a three-signature system or some other absurd plan), and agree with Mr. Hankey, who in his book on the institution, says that the Bank should also promote railway and public enterprises; but to such advances, which endanger a bank, no preference must be given; at all events some reasonable proportion must be maintained in that kind of business for which

banking institutions are established. That our Bank makes every effort to obtain these securities we all know; as soon as its reserve reaches a certain figure, it lowers the rate, say, from $4\frac{1}{2}$ to 4, instantly the market rate becomes $3\frac{3}{4}$; the Bank says $3\frac{1}{2}$, the market $3\frac{1}{4}$, and so on, until the Bank says 2 and the market $1\frac{3}{4}$. This process resembles nothing so much as omnibus nursing. Yet the Bank Directors cannot act otherwise, the rule in regard to money or supposed money is absolute, and interest must be lowered. But they obtain no more bills; on the contrary, the reserve increases and remains stationary for years, until the demoralisation, gradually sown, brings on the violent reaction. The fact is, that when the note reserve is large, when consequently the country itself is on the bullion basis, the successful competition of the adulterated currency at the Bank with the bullion basis becomes impossible.

The fits, starts, and extraordinary divergences in the rate of interest often puzzle the public, and create great mischief, not only in destroying legitimate profits, but in causing ruin and failure. To what are they due? When any change in the rate takes place, we endeavour to account for it, by referring either to declines or rises in the bullion, the reserve, the deposits, or the securities; and although we often doubt the necessity for strong measures, we on the whole rely upon the wisdom of the directors. A closer and comparative examination of the actual state of matters will, in reference to this, reveal to you singular facts, and furnish the true explanation of the anomaly. In order to show this I have, in Table G, herewith submitted, put together the moveable items, viz., bullion in issue department, total deposits, Government securities, "other" securities, and reserve in banking department (the others, viz., securities in the issue and capital, being fixed, rest and coin, more or less fixed items), and placed them in juxtaposition to the rate of discount. The test as to the demand for money on the one hand, and the absorption of the Bank's strength on the other hand, is given by the "other" securities in the banking department; and selecting (without any special choice, and avoiding the extreme weeks of each year) three different stages in each year, with the corresponding other items, you can with greater ease glance over the results. In order now to test the demand for money or its value, it must be borne in mind that an *increase* in bullion, in the deposits and in the reserve, a *decrease* in Government and other securities, have the effect of lowering the rate; whilst a decrease in bullion, deposits, and reserve, as well as an increase in the two securities, have the tendency to raise the rate.

TABLE G.—Table showing "Other" Securities in the Banking Department at Three Different Stages in each Year, and Bullion Deposits, Government Securities, Rate of Discount, Note Reserve, and Bills Discounted and Temporary Advances.

[000's omitted.]

Date.	Issue Department, Bullion.	Banking Department, Deposits.	Banking Department, Government Securities.	Banking Department, Other Securities.	Rate of Discount.	Reserve of Notes.	Bills Discounted and Temporary Advances.
1845.	£	£	£	£		£	£
25th Jan.....	14,122,	12,560,	13,651,	8,561,	2½	7,418,	3,178,
5th July.....	15,891,	18,471,	13,384,	12,944,	,,	9,279,	7,162,
6th Dec.....	12,540,	18,136,	13,201,	16,224,	3½	5,945,	10,512,
1846.							
28th Feb.....	13,105,	25,891,	13,136,	23,242,	3½	6,994,	17,279,
27th June	15,273,	23,693,	12,987,	12,257,	,,	9,664,	12,763,
7th Nov...	14,235,	14,729,	12,808,	12,153,	3	7,264,	6,247,
1847.							
3rd April	9,554,	16,464,	11,990,	18,627,	4	3,699,	12,606,
3rd July....	9,562,	18,514,	11,806,	18,758,	5	5,158,	12,977,
20th Nov....	9,525,	15,967,	10,633,	18,791,	8	4,228,	12,782,
1848.							
15th Jan.....	12,247,	15,903,	11,203,	15,254,	5	7,152,	9,527,
10th June	13,132,	15,764,	12,197,	11,398,	4	9,505,	5,212,
11th Nov....	12,961,	15,727,	13,329,	10,758,	3	8,894,	4,993,
1849.							
31st March	14,407,	18,184,	14,072,	11,278,	3	10,461,	4,330,
11th Aug....	13,648,	15,783,	14,282,	9,551,	,,	8,902,	2,978,
15th Dec.....	16,137,	20,528,	14,350,	10,803,	2½	12,184,	4,061,
1850.							
16th Feb.....	16,340,	18,089,	14,399,	9,657,	2½	11,153,	2,929,
22nd June	16,192,	19,927,	14,375,	11,115,	,,	11,339,	4,246,
5th Oct....	15,831,	20,861,	14,443,	13,389,	,,	10,527,	6,078,
1851.							
1st March	13,772,	18,369,	14,145,	13,174,	3	8,536,	5,674,
5th July....	13,581,	18,782,	13,545,	14,251,	,,	8,036,	7,387,
15th Dec....	15,902,	18,773,	13,241,	11,547,	,,	11,048,	4,570,
1852.							
20th March	19,175,	20,882,	13,567,	11,722,	2½	13,195,	3,493,
26th June	21,587,	21,699,	13,874,	10,755,	2	14,244,	3,143,
11th Dec....	20,970,	21,907,	13,962,	12,620,	,,	12,415,	4,414,
1853.							
5th March	18,361,	21,313,	13,464,	15,401,	3	10,086,	7,156,
23rd July....	17,460,	16,496,	13,537,	12,553,	3½	7,852,	4,836,
10th Dec....	14,620,	22,129,	15,043,	16,525,	5	7,575,	8,624,
1854.							
4th Feb.....	15,513,	15,704,	11,757,	13,346,	5	7,858,	5,396,
30th Sept....	12,464,	16,741,	11,006,	16,912,	,,	6,499,	8,545,
2nd Dec....	13,244,	15,806,	11,517,	13,710,	,,	7,627,	5,561,

TABLE G.—Showing “Other” Securities in the Banking Department, &c.
—Contd.

[000's omitted.]

Date.	Issue Depart- ment, <i>Bullion.</i>	Banking Depart- ment, <i>Deposits.</i>	Banking Department, Government Securities.	Banking Department, Other Securities.	Rate of Dis- count.	Reserve of Notes.	Bills Discounted and Temporary Advances.
1855.	£	£	£	£		£	£
31st March	14,510,	17,183,	11,581,	14,991,	5	9,129,	5,431,
1st Sept....	14,368,	19,345,	13,031,	15,661,	3½	8,263,	6,463,
6th Oct....	11,765,	18,956,	11,413,	19,791,	5½	5,473,	10,706,
1856.							
29th March	9,831,	19,461,	11,871,	20,063,	5½	5,289,	12,458,
19th July....	11,708,	15,994,	14,798,	13,153,	4½	5,321,	4,760,
15th Nov....	9,061,	15,933,	10,457,	19,054,	7	3,606,	10,412,
1857.							
4th April	8,570,	19,181,	11,645,	21,699,	6½	3,507,	12,867,
3rd Oct....	10,078,	19,122,	10,593,	21,835,	5½	4,686,	11,475,
25th Nov....	6,784,	21,555,	5,807,	31,350,	10	1,918,	21,185,
1858.							
20th Jan....	13,746,	22,289,	9,191,	22,250,	5	8,199,	—
17th Feb....	16,542,	21,222,	9,857,	17,634,	3	11,313,	—
27th Oct....	18,510,	20,321,	10,809,	14,783,	„	11,760,	—
1859.							
27th April	16,960,	21,351,	11,371,	17,505,	2½	9,496,	—
1st June....	17,095,	23,921,	11,281,	19,206,	4½	10,478,	—
5th Oct....	17,025,	22,708,	11,219,	19,792,	2½	9,388,	—
1860.							
18th Jan....	15,168,	20,876,	10,813,	19,593,	2½	7,589,	—
27th June	15,770,	22,339,	9,814,	20,263,	4	9,285,	—
21st Nov....	12,535,	19,464,	9,490,	20,298,	6	6,613,	—
1861.							
20th March	11,829,	20,253,	10,599,	19,707,	8	7,453,	—
17th April	12,368,	18,268,	10,272,	18,415,	5	6,548,	—
13th Nov....	13,566,	17,769,	10,812,	16,392,	3	7,477,	—
1862.							
28th May....	15,317,	22,285,	10,335,	19,392,	3	9,364,	—
30th July....	17,565,	23,539,	11,002,	19,442,	2	10,022,	—
29th Oct....	14,695,	23,266,	11,763,	18,978,	„	8,330,	—
1863.							
13th May....	13,731,	21,077,	11,151,	18,952,	3	7,744,	—
28th Oct....	13,769,	20,205,	10,995,	19,693,	4	6,547,	—
23rd Dec....	13,503,	23,595,	10,762,	21,418,	8	8,496,	—
1864.							
2nd March	13,264,	21,992,	11,124,	20,708,	6	7,670,	—
25th May....	13,041,	21,304,	10,785,	20,414,	8	7,274,	—
9th Nov....	12,925,	19,528,	9,972,	19,506,	9	7,184,	—

Note.—The returns of “Bills Discounted and Temporary Advances” cease after 1857.

TABLE G.—Showing "Other" Securities in the Banking Department, &c.
—Contd.

[000's omitted.]

Date.	Issue Depart- ment, <i>Bullion.</i>	Banking Depart- ment, <i>Deposits.</i>	Banking Department, Government Securities.	Banking Department, Other Securities.	Rate of Dis- count.	Reserve of Notes.	Bills Discounted and Temporary Advances.
1865.	£	£	£	£		£	£
1st Feb....	13,734,	20,455,	11,023,	18,920,	5	7,852,	—
26th July....	18,603,	20,229,	10,398,	21,782,	3	6,181,	—
22nd Nov....	13,673,	19,513,	9,741,	19,004,	7	7,739,	—
1866.							
16th May....	11,851,	25,086,	10,837,	30,943,	10	730,	—
27th June	14,170,	29,364,	11,348,	30,883,	,,	4,346,	—
14th Nov....	16,084,	22,425,	12,304,	19,061,	4	7,807,	—
1867.							
29th May....	19,287,	26,584,	12,886,	18,883,	3	11,358,	—
31st July....	21,725,	25,982,	12,830,	17,322,	2	12,542,	—
13th Nov....	21,150,	24,471,	12,319,	16,682,	,,	12,000,	—
1868.							
1st April	19,935,	27,725,	13,271,	20,698,	2	10,767,	—
10th June	20,943,	28,185,	13,294,	18,850,	,,	12,408,	—
18th Nov....	17,202,	24,398,	15,301,	16,873,	,,	8,713,	—
1869.							
31st March	16,473,	25,848,	14,999,	20,130,	3	7,862,	—
9th June	17,468,	24,583,	14,148,	17,331,	4½	9,626,	—
6th Oct....	18,626,	24,082,	15,211,	16,377,	2½	9,361,	—
1870.							
11th May....	18,735,	25,615,	12,931,	19,018,	3	10,290,	—
10th Aug....	18,230,	26,984,	12,483,	22,207,	6	9,449,	—
5th Oct....	21,545,	25,746,	12,983,	17,254,	2½	12,270,	—
1871.							
8th March	21,021,	32,296,	12,923,	23,983,	3	12,874,	—
20th Sept....	22,844,	27,326,	14,043,	17,781,	2	13,058,	—
15th Nov....	23,237,	29,041,	15,001,	17,583,	5	13,471,	—

Apply this rule throughout to the table, and you will find that, whether you compare periods within a year, according to bullion or securities, or whether you select different years according to rates of interest, you will find a majority of vast and seemingly inexplicable divergences. And let me state here distinctly, that the increase in business (the doubling and trebling of our trade) has little or nothing to do with this matter; for, in spite of this increase, of which *all* our banks have profited so immensely, the Bank of England has remained nearly stationary. The column of other securities (showing what the Bank has done) is as large in 1845 as in 1868, in 1856 as in 1869, &c. &c. The deposits in 1845, 1852, 1856, are higher than those of 1860, 1861, 1865. The bullion shows similar relations.

From 1865 to 1871 there is a general increase in the bullion, deposits, and other securities; but even this increase is but a small percentage on the colossal development of our commerce. Notable examples of the seemingly inexplicable movements of interest are furnished, among others, by the year 1847. Comparing 3rd April with 20th November, you will find that there is no change in bullion and securities, but a decline of 500,000*l.* in deposits, telling for a rise; a decline in Government securities of 1,300,000*l.*, and increase in note reserve of 500,000*l.*, in favour of lowering the rate; in all, 1,300,000*l.* in *favour of a decline in interest* from 4 per cent. Instead of that the rate is doubled, viz., 8 per cent. (It is true that three weeks before the 3rd April, reserve was $2\frac{1}{2}$ millions below, but this would have made but $1\frac{1}{4}$ million in favour of a rise.) Take the year 1863, when between 13th May (when the rate was 3 per cent.) and 23rd December bullion agreed, there being a rise in deposits of 2,500,000*l.*, a decline in Government securities of 400,000*l.*, and a rise in reserve of 700,000*l.*, together 3,600,000*l.*, for lowering; against a rise of 2,500,000*l.* in other securities for an increase (balance against lowering being 1,100,000*l.*), yet the rate rises from 3 to 8 per cent. Similar examples appear in other years.

It will be evident to you that, upon the ordinary merits of the case, these examples are inexplicable; *but the fact is this*: the Bank is anxious at such times to improve the bullion basis, and raises the rate of interest for that purpose, at any cost to the inland trade. Say that upon bullion of 9 millions it is desirable that 2 millions should be added. The rule of raising the rate to attract “money” is put into operation, and a rise from 4 per cent. to 6 per cent. brings in 2 millions of “money.” But, remember that the Bank’s money consists of bullion and of notes; so that, say, one-half of the 2 millions coming in is notes, the other half is bullion—only 1 million; and, as 2 millions are wanted, it follows that, instead of jumping from 4 to 6 per cent., the Bank must jump from 4 to 8 per cent. The mathematician will at once understand this case, and he will also perceive that this necessary doubling of the increase of interest beyond legitimate wants must produce the contrary effect when interest is to be lowered, viz., that the decline must be at a double ratio, so as to affect in equal measure two objects, that of the decline in the bullion as well as in the fiduciary reserve. Hence the frequent rapid decline in the rate, so inexplicable to many people, and the long periods of excessively and unreasonably low rates. In the second part of my paper, when speaking of an improved plan, I shall revert to this matter, and show its closer relationship to international exchanges. So far you may have gained the idea that the 15 millions of fiduciary issue act as the “dog in the manger” in both directions.

In the above example I have assumed that a rise in the rate pro-

duces an effect of which half falls on bullion, half on fiduciary notes. That can take place only when our foreign relationship stands fairly neutral. As soon as the balance of trade is definitely against us, the effect on bullion becomes less, that on notes more; so that the rate must be more than doubly increased in order to procure bullion. This leads to all sorts of mischief and incomprehensible complications, particularly visible in the years of pressure. Compare, for instance, 25th November, 1857, with 27th June, 1866, when interest stood at 10 per cent. The difference in bullion was 7,400,000*l.*, in deposits 7,200,000*l.*, in reserve 2,400,000*l.*, in other securities 500,000*l.* in favour of 1866, with $5\frac{1}{2}$ millions difference in Government securities against, the balance being 12 millions against lowering the rate in 1866 as compared to 1857, upon a total of other securities of 30 millions; and whilst in 1857 the bullion was $6\frac{3}{4}$ millions, and rose rapidly, until seven weeks later it had increased 100 per cent., it took, in 1866, twenty weeks until the rate could be lowered to a reasonable figure through an increase of only 30 per cent. on the bullion. I quite admit that, in the latter case, next to our strong international indebtedness, the want of confidence of the foreigner delayed the import of bullion; but this is only an additional element of confusion, caused originally by the speculation fostered through the false issue. Finally, as the results in a crisis show, when all the ordinary means of conforming to the Act prove ineffective—when failures take place on all sides—the whole system becomes like the bull in the china shop, dashing and breaking the crockery about, and threatening to push through the walls, until more room is made by suspending the Act.

The causes of the extreme rates may now be more clear to you, and you may agree with me that the rates must be in conflict with the market at home as well as the markets abroad. Hence the Bank cannot share properly in the life of commerce, and only at certain rare times can it, by way of its exceptional position, profit from such business in a way which is more or less usurious. The year 1872 will be such an example. Obligated to raise (in October and November) to 7 per cent. so as to protect bullion, the market being bare of money, although there were between 8 and 10 millions of reserves at the Bank, it accumulated at the same time “other securities” at a charge for interest of 7 to $7\frac{1}{2}$ per cent. In view of the *seemingly* threatening state of German wants, the Bank may appear to have done right in holding up the rate, but that at the same time it should hold so large a note reserve might seem inexplicable. Through all these misfits and misconceptions, our money market has become so chafed and uncertain as to wear almost the ludicrous aspect of a strong, powerful man, afflicted with hysteria or hypochondria. A movement of a couple of hundred thousands in bullion either for

abroad, or for Scotland or Ireland, frightens us—a decline in the reserve of a small percentage causes us to make long faces; and, as far as the Bank itself is concerned, we must suppose that the discount of a quarter of a million of bills, or thereabouts, is made the occasion for raising the rate. Is this right and proper?

The second purpose for which a Bank covets a reserve is that of its own safety. Sudden withdrawals of its deposits may take place, and a cash reserve must be maintained in order to meet such contingencies. In the case of the Bank of England there can be no question as to safety of position, the question of reserve here concerns momentary requirements only. The investments of the Bank of England, partly in other securities, are of such a nature that almost at any time they can be realised at once, in order to meet any decline in the deposits. So, at all events, it appears from the returns furnished. Besides this, the Bank has a large amount (equal nearly to its capital) in Government securities, and the power of moving these appears notably from the year 1857, when from 10 millions on the 4th November, they fell to 5 millions on the 25th November, at which occasion 2 millions of them passed temporarily into the issue department. Nevertheless, when there is a surplus of notes, I quite admit that the Bank can take supply from them without disturbing securities, but let it be distinctly understood that I am speaking here only of ordinary requirements in good times. When extraordinary requirements arise, as in times of crises, I have already stated that the extraordinary feature presents itself, not of a withdrawal of deposits, but of a large increase in them.

For such ordinary requirements, then, in times of peace, we may, notwithstanding the capital and securities at the Bank and their abundance, set aside an amount, which as you all will agree with me, ought to exhibit a certain degree of regularity, and within whatever that may be supposed to be, the fiduciary issue can be said to be available. Bear in mind here that the banking department also holds an amount of gold and silver coin ranging, say, from one-half to $1\frac{1}{4}$ million sterling. This feature I have left altogether out of my calculations. It would make a very large item in favour of all that I have laid before you, and strictly speaking I have the right to regard it as reserve, both from the point of idleness and safety, especially as, by the Act, the Bank can incorporate silver coin with the note issue within the limit of one-fifth of the whole of the bullion. But as it may be pleaded that this reserve of gold and silver coin in the Bank, in spite of its permanent character, is the result of the business across the counter, I have left it out. It is, however, an element when sudden withdrawal of deposits are problematically considered,

and can assist in overcoming a sudden dangerous demand. Granted, then, that two or three, or four or more millions of extra notes should be kept idle to meet such a contingency (though presently I may show you how with a better system of issue there would be no need whatever, even for this), what must we think of a reserve which varies from 15 millions downwards to less than one million? Can it be said to be in any way connected with this question of safety for a withdrawal of deposits? It is, as you see, either extravagantly large, or, when both for momentary requirements and for dangerous withdrawals of bullion it is called upon, it proves totally inadequate, the depositors alone save the situation, at their own risk.

The charge that our other banks and bankers in London invest too closely, to within one-eighth or one-tenth of their deposits, whereas the Bank keeps larger reserves, may be true as regards general policy, but the Bank of England itself has no right to make such a charge, for were it not for the privilege of the fixed issue of 15 millions, that institution would have no reserve at all. Supposing any other bank in London had 5 millions of capital, with 15 millions of deposits, holding securities to the amount of $17\frac{1}{2}$ millions, and consequently a cash reserve of $2\frac{1}{2}$ millions, only. If to such a bank the privilege of issuing notes were granted, say, by the transfer of 5 millions in consols, book-debt of the State or "other" securities to an "issue department," that bank would virtually possess a reserve of $7\frac{1}{2}$ millions, viz., $2\frac{1}{2}$ millions cash, and 5 millions fiduciary notes to 15 millions of deposits. The Bank of England has $14\frac{1}{2}$ millions of capital with $3\frac{1}{2}$ millions rest, and (13th November, 1872), $27\frac{1}{2}$ millions deposits, and 460,000*l.* in bills, together 46 millions to invest. Of this sum $13\frac{1}{4}$ millions are invested in Government securities in the banking department, $23\frac{1}{4}$ millions in "other" securities, and 15 millions in the securities of the issue department, in all $51\frac{3}{4}$ millions, against cash capital and deposits of 46 millions. But the privilege of converting the 15 millions invested in and deposited in the issue, gives the Bank the right to issue 15 millions of fiduciary notes to cover this apparent deficiency. Comparing this with the position of a bank with 5 millions, and a similar right of issue, the Bank of England ought to hold $4\frac{1}{2}$ millions in cash, *plus* the 15 millions of notes. Therefore, when the Bank holds in reserve the whole of the 15 millions of notes, it has practically invested its cash resources to a shilling, without margin. What is the nature of such a reserve compared with an actual cash reserve?

Do not permit yourself here to be misled by the usual cry about separation between issue and banking department. The separate

or “automatic” character of the issue department has reference only to bullion, and therein it is neutral, but as regards the 15 millions extra issue, its origin and present character, the case is in every respect identical with the supposed case of the Bank with 5 millions capital and the supposed issue thereon.

You are no doubt all familiar with the method of stating the accounts of the Bank as prescribed by Parliament, so as to separate the issue from the banking department. But, let us take, for example, the statement of 13th November, 1872, in the following manner:—

<i>Liabilities.</i>		<i>Assets.</i>	
<i>Issue Department—</i>	£	<i>Issue Department—</i>	£
Notes issued against bullion	18,978,380	Bullion	18,978,380
„ securities	15,000,000	Government and other } securities	15,000,000
<i>Banking Department—</i>		<i>Banking Department—</i>	
Proprietors' capital	14,553,000	Government securities	13,259,873
Rest	3,188,605	Other „	23,152,710
Public deposits	7,612,438	Notes in reserve	8,481,410
Other „	19,841,727	Coin	762,421
Seven days' bills, &c.	460,644		
	<hr/> 79,634,794		<hr/> 79,634,794

That the Bank, and nobody else, is responsible for the whole of these 79½ millions of liabilities, you will admit. That the Bank can discharge all these liabilities we all know, we all agree that it is the best and safest institution, because it has the largest capital and rest of all known banks. The 17½ millions of capital and rest must first be lost before the noteholders and depositors are in jeopardy, and such a contingency need not be thought of. *Nor is this the question before us*, the capital and rest of the Bank is a matter entirely apart from the principle upon which the note issue is conducted. The former, and the risks which it runs, concern the proprietors; the latter is dependant upon a form of contract between the State and the Bank through which the public is to be furnished with a species of currency. The former comes into play when the question of winding up the Bank arises, and for this purpose it can be called a security or reserve *invested*, the latter is a matter concerning a constant or suitable supply of currency, of free uninvested reserve, needful for the regulation of the current necessities and claims upon the Bank. We must be clear upon these points in order to understand the real nature of the controversy. Unfortunately, whenever the principles of the issue are under discussion, the defenders of the system come forward with the capital and rest of the Bank, and although they know well that the issue has its own system and securities, they endeavour to veil its anomalies by

an appeal to the capital and rest. No wonder that with the confusion of ideas thus brought about, the public is disposed to lump it altogether, and to listen to the song of "lullaby" in sheer fatigue of the subject. Should the national economist fall into the same snare, and allow this proceeding? Does the large capital of the Bank justify a gigantic error in the issue from which all suffer?

The boast of the Bank's capital and rest frequently takes the form of separating the two items from the liabilities, and representing them as independent reserve. That this is contrary to the rules of accountancy will be conceded, but it is no doubt true that the capital and rest would bear the first brunt of losses, that the shareholders of the Bank would first suffer. But I maintain that the national economist has just as much right to make his voice heard on behalf of the stockholders of the Bank, as he has the right to draw attention to other public matters; and the Bank, as a public institution, is subject to the same control. Bank stock is an important feature in the social and economical arrangements of the country, and requires just the same conscientious guarding as the deposits and notes. Hence any attempt to exclude the capital and rest of the Bank from the liabilities proper must be repudiated and looked upon as tainted with the suspicion of demoralisation, unworthy of the institution.

I think, therefore, that I am justified in maintaining, that, for all the current business of the Bank (and that does not mean the winding up), and all the controversy as regards the issue arrangement, the capital and rest of the Bank stand in the same category as the other liabilities, and being invested, the mere question of free reserve becomes one of *pro rata* on the whole aggregate of liabilities.

Now if you look at the form in which I have given the account, which states the issue department first, and more truthfully, inasmuch as it states the amounts of notes virtually issued against bullion and against securities, you can please your fancy in either adding the whole of the liabilities or assets together, or in keeping the departments separate, in either case you cannot alter the result. The total liabilities being $79\frac{1}{2}$ millions, there are as assets 19 millions of bullion, $9\frac{1}{4}$ millions of note reserve and coin, together *seemingly a reserve* of $28\frac{1}{4}$ millions, and $52\frac{1}{4}$ millions of securities, leaving thus an *apparent* cash reserve of about 35 per cent. Is this view, generally given by the defenders of the Act, a correct one? It is utterly false, for the 19 millions of bullion must be struck out as an item which has entirely lost its character of a free reserve, it is distinctly and clearly pledged for the notes, and the Bank directors have no control whatever over it, the very plea of the "automatic" character of the issue department proceeds upon this ground. The

only free “reserve,” then, is the $9\frac{1}{4}$ millions of reserve of notes and coin.

If the issue is now separated from the account, the liabilities in the banking department would amount to $45\frac{1}{2}$ millions against a free reserve of $9\frac{1}{4}$ —so that about one-fifth (in juxtaposition to other bankers’ one-eighth or one-tenth) would seem to be available. The separation of the issue department, however, cannot do away with the fact that 15 millions of claims or assets of the Bank have been transferred to it, that the institution is responsible for their validity, and so I maintain that the actual amount of securities, or assets, or investments effected is $61\frac{1}{2}$ millions against $9\frac{1}{4}$ millions free assets; or between one-seventh and one-eighth, whereas in the case of a supposed bank with 5 millions of capital and 15 millions of deposits—investing $17\frac{1}{2}$ millions in securities and having $2\frac{1}{2}$ millions uninvested, the free reserve would be one-eighth. Can the Bank, under these circumstances, say that it is so immensely more prudent than other “banking houses” as regards free reserve?

Recollect here that I take the $9\frac{1}{4}$ millions of reserve (of which $8\frac{1}{2}$ are notes) as wholly consisting of real cash, passing over the anomaly that in the issue the whole 15 millions of notes against securities are liability—whilst in the banking they act as assets, and that is the reason why I am justified in including the 15 millions of securities as investment. But if the issue department be left out of the account, if the 15 millions be deducted again, leaving the liabilities in the banking department at $45\frac{1}{2}$ millions, the free reserve amounting to $9\frac{1}{4}$ or about one-sixth, then the question must arise again, what is the real nature of this free reserve? The other banker holds his one-eighth free reserve in actual cash, free of any contingency whatsoever, but the one-sixth reserve of the Bank of England arises from a transaction in the issue department, which is a mixture of bullion and securities, in which the notes out in circulation can diminish the bullion, and render the Bank’s reserve of less value, until the contingency draws near under which the larger proportion of “Government securities” in the mixture must first be converted into bullion. The best that can be said under the circumstances is that the 15 millions of notes issued on securities, and the 19 millions against bullion, together 34 millions, must share in the 19 millions of bullion—each receiving a percentage—in this case 56 per cent. The actual cash value of the Bank’s free reserve of $9\frac{1}{4}$ millions ($8\frac{1}{2}$ notes) then becomes reduced to about $5\frac{1}{2}$ millions—or about one-tenth of real reserve.

I am aware that an outcry will be raised against this method of stating the case, the controversy will turn again upon the point whether fiduciary issue is equal to bullion issue; and I must leave you to decide whether the arithmetical difference of $\frac{1}{24}$ th between

the absolutely free cash reserve of other bankers of one-eighth, and the fiduciary reserve of the Bank of England of one-sixth, gives to the latter institution a superior claim as to the holding of available reserves. If in addition to this you bear in mind the fact that the other bankers keep their cash reserves at the Bank of England, and that this one-eighth is included in the one-sixth of the latter, which they have the right to withdraw at any time, you can put the climax upon the matter without me.

Now, if this is the state of things when 8 or 9 millions are in "reserve," what is the true position when that reserve is reduced to 2 or 1 million, or when the cry of misery is raised for the suspension of the Act. What rescued the Bank from its dilemma? who else but the depositors and bankers, long before the effects of the rate of interest upon bullion and reserve could manifest themselves. Let me ask you again to separate this question from that of the capital and rest of the Bank; the question here is not that of the last extremity of winding up the institution, but that of the requirements of the moment—and *that of avoiding this winding up*, brought near by the deception in the employment of the fixed fiduciary issue, at all hazards, and at a tremendous sacrifice to the welfare of the country.

In my opinion, the Bank when holding even as much as 10 or 12 millions of notes in reserve, when, according to the opinion of some authorities, it is "strong," is in reality in a far more precarious position than the other bankers with their habitually small, but free cash reserves. The situation is extremely artificial and delicate on all points, and were it not for the Bank's strong capital and the general faith of the public in its stability, the system would have broken down long before this.

In Table C, pp. 469—472, I have exhibited the proportions of idle deposits as large. This might lead to the supposition that in spite of what I have said here the Bank keeps large free reserves. Recollect, however, that on p. 476 I distinctly state that this table is made on the supposition that the 15 millions of fiduciary issue have precedence over deposits, that they are gone and invested, leaving the deposits to come after. I accepted the fallacy only in order to show to what unnatural results it must inevitably lead; but to Table D I added another column headed "Percentage of Idle "Fiduciary Issue," throwing the onus of the idleness upon that issue.

Let me here endeavour to bring the common sense of Englishmen back to the truth by another method of illustration. The defenders of the present form of issue allege that the 15 millions are as good as gold, and that as far as the banking department is concerned, no liability whatever is attached to the value of the

reserve. If such were the case, *i.e.*, if the Bank could freely use the 15 millions, why does it not cease the more or less precarious discount business and invest the 15 millions again in Government securities? The origin of the transaction is the investment of 15 millions in Government and other securities, placed in the issue against the right of issuing 15 millions of notes. These being "money," the Bank might purchase another 15 millions of securities and profit also from the interest gained thereon, thus killing two birds with one stone. The first investment gives 3 per cent., from that, it is true, expenses of issue and share of profit to the State must now be deducted, but these items have nothing to do with the "security" offered by the investment; the expenses of the issue, if need be, might be much reduced, and the State might resign its share of profit (like the French Government). We should then witness the pleasant spectacle of seeing how 15 millions of money can be manipulated so as to be invested in 30 millions of securities, obtaining the interest on each 15 millions, and yet leaving one of the 15 millions *unpledged* and free in the hands of the investor. Now if this second 15 millions consists of Government and other securities, of the same character as the first, equally valuable, what objection would there be to allowing the investor again to place them in an issue department, and to issue a second batch of 15 millions? Why should not a third, fourth, and more batches, *ad infinitum*, be so created? You will admit the utter absurdity of such a proposal, yet it can be made, if it be maintained that the first 15 millions have an absolutely independent value of their own, founded on such securities; and you must rise to the level of this theory in order to be able to conceive the utter weakness of the allegation that fiduciary notes are as good as gold. If, however, under these reflections you should say, we cannot go so far as to maintain that such notes are quite as good and safe as gold; if you admit only the principle of inferiority, I have gained my case, for the degree of inferiority can be determined between us.

Determine it in this way: the Bank looks upon the 15 millions as an absolutely free and valuable asset, and tries to act with it accordingly; in reality it is an asset subject to the liability of bullion, and moreover to the bankers' balances. The Bank acts like a merchant who with, say 100,000*l.* of assets and 60,000*l.* to 120,000*l.* liabilities (varying according to the state of the bullion in store, the reserve in hand, and the bankers' balances and deposits generally), nevertheless considers himself worth 100,000*l.* These are "singular" views, no doubt, but it is just possible that they fairly represent the case.

No wonder, then, that such singular assets as these 15 millions of fiduciary issue should refuse to do their office, that our generally

sound trade should decline to associate itself regularly with it, and leave large unemployed reserves of such “unnatural” money. No wonder that in so false a system the evidence of mutuality and compensatory action is so frequently absent and replaced by irregular profits and conflicting disturbances. No wonder that such a system should give rise to false charges, to doctrines of finance and policy which seem as if they had been dragged by the hair through the thick and thin of all anomalies until, after this process, they are, forsooth, set up as idols destructive of all common sense in the matter. Lead any of the defenders of the Act on to the subject of the large and false reserve of notes, and you will find that he will endeavour to explain it by allegations which I have here refuted, and he is unable to perceive that that which seems natural in his sphere, can possibly be submitted to more general tests. In the same manner he sees nothing but “right” in the course that has been pursued when the reserve becomes small, and is disinclined to entertain the thought that a system which has generated the doctrines to which he is wedded, might possibly be improved so as to give a more natural aspect to all the matters which are connected with the present seemingly complicated state of the question. He cannot realise the fact that the fiduciary issue of 15 millions is liable to heavy claims which have precedence over its usefulness as a banking reserve, that indeed (and this is the mildest form of expression which can be used as descriptive of its character), it is a *mere nominal and unavailable*, but *not a practical and really available* reserve—a helpless, crippled thing—for the sake of which so many great interests, imbued with vigorous life and having an absolutely free and independent value of their own, are sacrificed.

What is the cause of this failure of the rules of supply and demand, this danger to, and weakness of the Bank of England in the matter, this waste and neglect of the wealth of the country represented by the deposits (and therein lies the wrong to the depositors who practically bear the brunt of both the extremes of the situation), in short of the whole conflict? Here is the largest and most powerful institution in the world, in midst of the richest trading nation, it is managed by the most experienced members of our mercantile community, men who are disinterested and have at heart the public good alone, and that of the Bank. These men should not have a vacillating policy, for if they changed their course, the charge of having done wrong before or doing so now might be made against them. And the outside public, honouring wealth and experience, proud of its own great *quasi* National Bank, is loth to believe, in spite even of the conflict and discomfort which manifest themselves (or whatever term you may choose to apply to the existing feeling of doubt), that there can be any-

thing wrong. Yet the whole grievous disorganisation of their splendid and powerful machinery is due to the uncouth, unscientific notion, that 15 millions of fixed fiduciary issue are as good as 15 millions of gold, and that they must be looked upon and treated as such. I trust I have succeeded in showing that the idea of "stability" which some persons of weak arithmetical education seem to perceive in the "fixed issue" is fallacious, and that this issue acts in no other way than the enticer of the Bank of England itself into danger. This is the sum and substance of the "stability."

I now come to the question of the supposed direct pecuniary profit to the Bank arising from the issue, and what I have to lay before you will go far to confirm that which I have said.

The arrangement which exists is as follows:—The Bank, in its issue department, holds invested 15 millions of securities, on which it receives an annual interest of say 3 per cent., or 450,000*l.* After deducting the expenses of the issue and the share of so-called profit which the State receives, there remains a certain balance to the profit of the issue department. Besides this, then, the Bank receives back its investment (to use this expression) in the shape of 15 millions of fiduciary notes, which it can use as money; and you probably imagine that by this process of investing money twice over—of killing two birds with one stone—the Bank must make a considerable profit. Yet I am prepared to show that the Bank loses a sum by it, which on the average is equal to 100,000*l.* per annum.

In order to make this clear to you, you must bear in mind the fact that the sum of notes issued on bullion brings no profit whatever to the Bank of England. As far as interest or profit on this portion of the issue is concerned, it is immaterial whether the amount in bullion be 5 or 25 millions, or any other sum; indeed it may be said that the Bank, for the convenience of the public, entirely bears the general charges which fall on the issue against bullion for the benefit of the public.

The whole merit of the case of profit and loss rests on the 15 millions of fiduciary notes the use of which as money is supposed to cover the expenses on the total issue, and to leave a profit besides. It is absolutely necessary that you should agree to this as a matter of account, and thus bear in mind the purpose of the 15 millions, not because I seem to you to be opposed to these 15 millions, but because this method of stating the case is the only true one

In a Parliamentary Paper (Bank of England, 7th February,

1861, No. 12, p. 13), the committee makes the following report [in reference to the issue:—

“ Issue Department.

“ The expenses of the issue department of the Bank of England, have been returned to us as follows:—

	£
Wages	89,731
Pensions	8,063
Rent	25,600
Repairs	8,568
Directors' allowance.....	2,926
Rates and taxes	2,300
Stationery	1,811
General charges	6,790
Bank note paper	11,623
Interest on cost of machinery.....	1,500
Composition paid to bankers	20,493
Totals.....	<u>179,405</u>

“ This statement shows a great increase of charge over the amount of the account presented to the Bank Committee in 1832; and the aggregate is largely in excess of the estimate submitted to the Chancellor of the Exchequer in 1844. The augmentation is chiefly explained by the composition paid to country bankers for issue under the Act 7 and 8 Vict., cap. 32, and the increased charges for rents, and for the renewal of bank notes.

“ The profits of the issue department for the year have been returned to us as follows:—

	£
Interest on fixed securities	445,117
Gain on foreign coin and bullion:	10,811
	<u>455,928</u>
Deduct expenses as above	179,405
Profit	<u>276,523</u>
Of this sum the public receives from the Bank—	
1st. Composition in lieu of stamps	£60,000
2nd. For share of profits of the circulation } department	128,078
	<u>188,078</u>
Net profit	<u>88,445</u>

It is unnecessary here to discuss the correctness of the items of expenditure given; nobody need doubt that they are all perfectly justified and legitimate, appertaining to the issue. The only exception, on principle, might be the last item, “compensation paid to bankers” who have given up their issue; but as this item forms part of the actual contract, it must be retained.

I must further state that this return refers to a year when the issue stood at 14,475,000*l.* No returns of expenses were published when the issue stood at 14,000,000*l.*, or when, in 1861, it was raised to 14,650,000*l.*, and finally, in 1866, to 15 millions. I am obliged, therefore, to determine the expenses of these other years according to the amount of issue; and, when it is borne in mind that during recent years bankers' compensation has increased, and rent or other charges have risen, the proceeding would seem fair, and serve as a set off against any miscalculation of previous years. I accordingly return the expenses:—

	£
From 1845 to 1855	173,511
„ '55 „ '61	179,405
„ '61 „ '66	181,574
„ '66	185,912

Besides the actual expenditure on the issue, the Bank pays to the State a sum in composition of stamp duty, and so-called profits on the issue, which in the first period,

	£
From 1845 amounted to.....	180,000
„ '55 „	188,078
„ '61 „	192,480
„ '66 „	195,078

So that the total expenditure may be given,

	£
Since 1845	353,511
„ '55	367,483
„ '61	374,054
„ '66	381,000

On the other hand the investment of the “fixed securities,” which at the above return were 14,475,000*l.*, yielded 445,117*l.*; calculated at the same *pro rata* manner—

£	£
14,000,000 would have brought.....	430,510
14,475,000 „	445,117
14,650,000 „	450,495
15,000,000 „	461,261

In the return submitted there also appears the item, “gain on “foreign coin and bullion, 10,811*l.*,” as profit on the issue. I leave this item (which is sometimes larger) out here, for it has no immediate reference to the issue of the 15 millions of notes. It arises solely in connection with the portion issued on bullion, and the Bank can deal in that article without the fiduciary issue. In this view I am confirmed by one of the directors of the Bank of England who at the Bank Inquiry of 1857 (see Report 220, Sess. 2, p. 36, No. 360), said: “The profit upon bullion and coin is entirely irre-

“spective of the issue of notes, and, though it comes to the profit of the same department, it is in reality not a profit contingent upon the issue of notes.”

I then arrive at the result that the investment of the 14 millions—until the present 15 millions, at the interest here set forth, less expenses—gives an annual balance in favour of the issue department of—

	£
From 1845	76,999
„ '55	77,634
„ '61	76,441
„ '66	80,261

That is to say, the Bank, having parted with 15 millions of money by way of investment in certain advances to the State and on other securities, receives, when the expenses are deducted, an annual profit of 80,261*l.*, equal to a rate of interest of $\frac{8}{15}$, or a little more than one-half per cent. per annum on the money laid out.

But you will say, the Bank receives this money (I am careful not to say this “capital,” for the meaning can be twisted) back again by the authority to issue the 15 millions of notes. I agree with this, but, naturally, it depends upon the employment of the 15 millions whether the Bank shall make a profit or not. If the whole 15 millions were thus employed at, say, $4\frac{1}{4}$ per cent. (the average rate of interest), the Bank would make, including the 80,261*l.*, a total profit of 717,761*l.* per annum. A reference to the state of the reserves will show you that this is impossible; but, before I lay the results before you, let me again remind you that the question of what is uppermost—bullion issue or fiduciary issue—will again arise here. The Bank-Act-people will tell you that the surplus is not notes, but bullion; they may say even, “We never gave our capital, or any capital, in bullion for the securities of the issue, we paid in notes and hold our capital intact.” I must leave it to your common sense whether you agree with them, but even if you should do so, I can maintain that if the surplus is bullion, and bullion instead of notes is consequently idle, it is the fault of the fixed issue of 15 millions fiduciary notes that it is so, and so the matter remains as broad as it is long. I have calculated the total interest which the Bank thus receives from the employment of that portion of the fiduciary issue which it has been able to use, or, if you like it better, of that portion of the total issue, which, after deducting bullion, is put into circulation. In doing so I have taken the Bank rates of discount as they stood from week to week, and although the Bank makes certain advances below that rate, in which the employed proportion has a share, I have—seeing that on rare occasions it makes a higher charge for long bills—adhered to the current rate.

TABLE F.—*Total of Interest Earned by the Bank on the Notes in Circulation above the Amounts of Bullion held.*

	£		£
1845	167,207	1860	285,300
'46	204,769	'61	426,930
'47	485,567	'62	138,584
'48	188,003	'63	310,108
'49	121,351	'64	576,180
1850	86,791	1865	347,814
'51	166,005	'66	690,177
'52	38,460	'67	88,984
'53	222,956	'68	92,986
'54	379,351	'69	186,611
1855	300,721	1870	111,566
'56	549,672	'71	59,053
'57	675,227		
'58	103,864		
'59	113,902		
			<hr/>
			7,118,148

The total for the twenty-seven years gives an average of 263,635*l.*, and if you add thereto the so-called profit of the issue department at the respective rates (according to issue), an average of 77,641*l.*, you obtain 343,276*l.*, which, on the average amount of the issues, gives a return of interest of 2·346 per cent. per annum, or a little over 2½ per cent.

That is to say, *the investment of the 14 to 15 millions at 3 per cent.* (or a trifle more), after *allowing for expenses*, together with the profit which the Bank makes on the 14 to 15 millions of notes—the two birds killed with one stone—the *whole business* yields but 2½ per cent., equal to an annual loss of 100,000*l.* on the supposed first investment of the money at 3 per cent.

But the question has no great special reference to the investment of the 15 millions in the first instance. That investment is an accomplished fact, yielding, at 3 per cent., 450,000*l.* per annum, and standing as a mere security, the issue might go on, say under some other form of guarantee, without taking into account the rate of interest derived from the investment. Indeed, if that were made a question, I have the good right to say: the Bank might use this money in commerce, at a free rate of interest varying on the average at 4¼ per cent., without being encumbered by the rate of interest imposed by the issue and the expenses attached thereto. In that case the loss per annum might be stated at 287,500*l.*, a matter for the consideration of the proprietors.

The question may be narrowed simply to the expenses of the issue on the one hand, and the profits of its productive element on the other hand, and then according to the average expenditure of 263,635*l.* per annum, against the annual expenditure of 365,688*l.*, the loss is 102,000*l.*, showing about the same result. Putting together the annual expenditure as against the annual produce of interest, the following profit and loss account can be made out.

TABLE H.—*Showing the Annual Charge on the Issue, the Annual Interest, and consequent Profit and Loss per Annum.*

Years.	Annual Total Charge.	Annual Interest Earned.	Profit.	Loss.
	£	£	£	£
1845	353,511	167,207	—	186,304
'46		204,769	—	148,742
'47		485,567	132,056	—
'48		188,003	—	165,508
'49		121,351	—	232,160
'50		86,791	—	266,720
'51		166,005	—	187,506
'52		38,460	—	315,051
'53		222,965	—	130,546
'54		379,351	25,840	—
1855	367,483	300,721	—	66,762
'56		549,672	182,189	—
'57		675,227	307,744	—
'58		103,864	—	263,619
'59		113,902	—	253,581
'60		285,300	—	182,183
1861	374,054	426,930	52,876	—
'62		138,584	—	235,470
'63		310,108	—	63,946
'64		576,180	202,126	—
'65		347,814	—	26,240
1866	381,000	690,177	309,177	—
'67		88,984	—	292,016
'68		92,986	—	288,014
'69		186,611	—	194,389
'70		111,556	—	269,434
'71		59,053	—	321,947

Note.—The only profits are made in years of pressure and crisis.

If interest be calculated on the reserve of gold and silver coin held in the banking department, there would be a loss of 789,211*l.* for the twenty-seven years, or an additional loss of 29,000*l.* per annum, but for reasons already given, I have left this reserve quite out of my calculations.

As regards the expenses in the issue department, I have followed out the method employed in the parliamentary paper, which I should imagine ought also to be that in use at the Bank, for both the expenses of the issue and the Government share of profit belong to the “issue department,” and the Act reads in accordance therewith. I mention this because efforts may be made to construe the account differently; the Bank-Act-people, although they fully adhere to the pleasing fiction of the total separation between the two departments, are quite ready to mix them up when it seems suitable for an argument. However they may twist the matter, I challenge them to produce a different result in the account.

A favourite way of puzzling the inquirer is this:—“Here is our

“ weekly return, our issue department, in which our 15 millions are
“ invested (the greater part of our capital as you are pleased to say),
“ against securities; you think, therefore, it is gone in that, but
“ look at the banking department, there is our capital again, fully
“ stated and active in the account.” Admitting this as a method of
stating an account, what is the actual fact? The Bank has invested
15 millions (capital if you like) in the issue, from which it receives,
after deducting charges, a return of one-half per cent. interest per
annum only. This capital appears back again by the authority of
issuing 15 millions of fiduciary notes, but, as the reserves show,
these notes cannot somehow be properly used. In truth, in con-
sideration of an income of 70,000*l.* to 80,000*l.*, or one-half per
cent. per annum, in the issue department, the Bank has parted with
resources of cash or capital against securities which should be
realisable into gold, but are not allowed to be thus converted, taking
in return the authority to issue 15 millions of fiduciary notes, upon
the supposition that they are as good as gold. Here Hercules
stands again at the cross roads, and must decide for himself which
is best, gold or fiduciary notes. In my opinion this action on the
part of the Bank bears a close resemblance to Esau and his mess
of pottage.

The defenders of the Bank Act have another method of stating
their case; they say, “ The issue department is totally distinct from
“ the banking, and we have nothing to do with the 15 millions
“ of issue. Let the State take over the whole issue, bullion and
“ all, paying us for the securities, or leaving us to sell them, we
“ should then cease to have anything to do with it.” This is true,
and the Bank would not only obtain its reserve in cash, it would
also be rid of the annual expenditure of 381,000*l.* and I am
inclined to think that this would be a very good job for the Bank,
for if you look at the present results of the issue at only 263,000*l.*,
whilst all the time the reserve of notes shows so large an average
of idle notes, you will see that the saving of the 100,000*l.* would
enable the Bank to keep an extra reserve of about 2½ millions
cash, without reckoning on the one-half to 1½ million of coin now
habitually held in the banking department.

Take, for instance, the year 1852, when the interest of the
fiduciary issue amounted to but 38,460*l.*—a loss against expenses
of 327,000*l.*—interest during that year was at 2 per cent., so that
the Bank might have kept an absolutely idle cash reserve in actual
coin of over 16 millions sterling, besides the habitual 1 to 1½ million
of gold and silver coin. The years 1850, 1867, 1868, and 1871
show similar results.

In pursuit of anomalies, permit me further to point out, that the
average result of the interest on the notes in circulation above
bullion is given as 263,000*l.* per annum. This average, however,

would be much less were it not for the exceptionally high profits on the issue which the Bank makes during the times of panic, crises, and mercantile ruin; for at such times the institution makes its best harvests. The Bank may say: but we are also suffering heavy losses during these times. Would that the Bank were compelled to state the amount so lost—but the plea of these losses does not concern the legitimate traders, who are compelled to furnish the harvest. The years 1847, 1856, 1857, 1864, and notably 1866, are examples of this kind; but bear in mind that they are principally portions of these years, not the whole years which bring these high profits. A reference to the highest or lowest states of the reserves, and the rates of interest during those times of distress, will show what I mean. These extra profits arising from the mercantile community (so far on a fair basis of momentary supply and demand, I admit), ought to be deducted from the average.

Reflect further how this state of things clashes with the fair rules of mutuality which should guide all matters of money and all banking laws. What are the facts in this case? The issue costs the Bank 381,000*l.* per annum. Now, when the fiduciary issue circulates to the amount of, say, 13 millions (leaving but 2 millions in reserve), this charge is equal to about $2\frac{9}{10}$ per cent. per annum. At such times the actual interest rules high, say at 8 per cent., and the bank is brought face to face with the desire to make larger profits. Notably, however, the longest periods are those of quiet; and when the reserve amounts to, say, 14 millions, leaving 1 million over bullion in circulation, the costs on this 1 million are equal to $38\frac{1}{10}$ per cent. per annum, and the Bank cannot get more than 2 or $2\frac{1}{2}$ per cent. in return. No wonder that with these contradictory positions the directors of the Bank must proceed with a degree of prudence and circumspection which brings them into frequent conflict with the real interests of the community.

The defenders of the Act, ready to turn anything into use, may even say this is the very thing we want, but I question whether they could bring forward a string of logical arguments without introducing some hocus pocus as a supposed final blow, with which they would ruthlessly destroy even their own scanty admissions of the force of true reasoning.

I think I have shown to you that in the question of account or profit and loss the Bank is a loser by the Act. But, it may be said, the Bank, by means of its connection with the Government and the right of issue, enjoys other indirect advantages which compensate it for any such drawback. Let us analyse what they are. The Bank of England has the management of the National Debt. For this service it receives a specified sum amounting to about 200,000*l.* per annum (see "*Hankey on the Bank of England*," p. 57), just

like any paid agent, and the State gets rid of a duty which it could not itself perform at the same price. Necessarily, inasmuch as the Bank is the great banker of the State, of other banks and bankers and important persons, more or less connected with governmental money business, there is a great mechanical advantage in this arrangement for all parties concerned. But the whole is a business which stands entirely on its own merits, and for the profit which it brings to the Bank, *ie.*, the *pro rata* salary paid, it has been hinted even that the remuneration is not sufficient. Then it may be said, the Bank keeps the Government account, and this is a set-off. Now, of all the accounts which the Bank keeps, the public accounts are the most irregular. A glance at the general returns will show this. No banker can look upon such an account as being worth more than the interest on the minimum balance. The surplus over the minimum, being simply collected by the State, and already assigned to specific purposes, cannot be actively employed, and for that matter it might as well be held at the Treasury as at the Bank. No wonder that the governor of the Bank stated during last session, when the question of the Bank's paying interest on this account was mooted, that the Bank did not care for the account at all. This account, however, by its violent fluctuations, in spite of its uselessness for commerce, affects the reserve considerably. The Government, besides the mechanical facilities of the account, of course enjoys the advantage of keeping its money with the largest and safest institution, and could not dare to change its bankers.

It has been alleged that the *lost notes* form a considerable item in favour of the Bank. Nothing has been published showing what kind of profit this is, and the Bank is no doubt bound to pay any note which may turn up. The Bank can tell from the half-notes handed in how many of them are lost, and it is well known that it facilitates the recovery of the other halves, and pays the first under certain guarantees. For the notes absolutely lost it must, nevertheless, retain provision until the State settles the question of whether, after a while, the Bank is freed from paying them. In any case, the supposed profit from lost notes would not be a legitimate source of profit to the institution.

It has also been suggested that the Bank of England derives great advantages from old and forgotten deposits, that just as claims for dividends on consols are forgotten, so there might be deposits for which no claimant appears. Certain continental papers occasionally allude to large sums supposed to have been lodged with the Bank of England many years back, and although such allegations are of the "cock-and-bull" class of stories, yet they have given colour to surmises. It is certainly not the business of the managers of the Bank to publish such claims, on the contrary, they

must remain quite passive in the matter. Nor (supposing such deposits did exist) have those dealing with the Bank any concern in it, with the exception of the State on behalf of the public at large; for the question arises, whether such forgotten deposits should remain with the Bank or whether they should accrue, after proper steps having been taken, to the Treasury. The view can be maintained that such deposits have been made at the Bank of England because of its character as a *quasi* State bank, and a parliamentary inquiry into the subject seems advisable, if it were only for the purpose of setting at rest all the cock-and-bull stories here and elsewhere. The bank note issue itself has no connection whatever with this matter.

The great position of the Bank, its high credit, its large deposits without interest, and its general influence and monetary power, are due simply to its enormous capital and rest, and to the prudent and superior management of the institution under all circumstances. The fiduciary issue confers no advantage which can be kept secret, which would not at once be made apparent, and stand the test of all criticism in its details and the full light of the sun. The disadvantages, however, which the issue brings, I have endeavoured to point out to you in each single instance or object, and the final question remains, does it answer on the whole "somehow," *i.e.*, if it does not suit one object at one time, does it not suit on the average. This "somehow" reminds me much of the gentleman, who being with his daughter on board an American steamer where all the machinery stood on deck, was asked to explain its principles. Pointing to the steersman he said "You see that man working the " wheel round; well then, there is this crinkum crankum pushing " that iron thing in and out, pumping away at it, and there are the " firemen with long iron pokers pushing in and out, and so you see " they all perspire and push, and so, between them, they shove the " boat along somehow!" If any principle of compensation or counteraction existed between the various objects which the Bank Act is supposed to carry out, it would clearly assert itself in the averages, but the present extremes show clearly that these objects, singly and jointly, are more or less defeated by the system.

But what the fixed fiduciary issue does is this: it disturbs our valuation, it cheats us into the belief that we have plenty of money, for I have met with bankers who looked upon a strong note reserve as indicating strength of the Bank and the situation. I myself look upon this supposed strength as the sign of weakness and consequent danger. The large reserve, although it is chiefly due to the blood-letting and want of animation that has taken place during a crisis, may appear satisfactory for a short time following the upset, but when after a few months it still remains, and continues for years, it becomes the great agent which fosters speculation.

Interest falls very low, and the necessity to use the money arises. Speculation begins from below ; for a time bankers and others resist, but when the better class of speculators make money, and securities are shown of more or less legitimate value, one banker or capitalist follows the other in advancing upon them. The prudent bankers (let me admit, however, that many of our bankers know well to keep clear of all speculative things) and the Bank of England resist to the last, but I have it upon hearsay that this institution itself had some interest in the very things which assisted in laying the foundation of the crisis of 1866. The crisis, the strangling process, the loss to legitimate commerce all over the country, the increased pauperism, then follow the deception. If the Bank directors were able to control the reserve, they would, instead of lowering the rate of interest, keep it at a reasonably higher figure long before the crisis is due. But they cannot do this, for however far the directors may be able to see, they cannot overcome the fact that the reserve exists, that the ordinary rules must be applied ; the fallacy of the issue acts as a fog, hence the haste and terror when the pursuer suddenly looms through it.

There are many people who would altogether refuse to the Bank of England the title to rule the discount market ; and, indeed, as far as the small share which the Bank takes in discount or the actual working business of the country is concerned, this opinion seems justified. And if it is borne in mind that the notes, gold, and silver currency in the country out of the Bank amounts to from 110 to 130 millions, it would seem singular that the demand for a few millions, say even 10 millions, should go so far as to affect, through the rise in discount, the money value of the raw material in Lancashire, Yorkshire and elsewhere, where legitimate non-speculative industry flourishes, the mainspring of the country's wealth. I quite admit that the lead which the Bank takes in altering the rate of discount suits other bankers, for it appears that they can compete successfully in lowering, and can profit only by the raising, of the rate ; and, on the other hand, there must be some central institution which has the power of initiating such movements. The question whether they have been initiated fairly does not depend on principle, but on the good judgment of the directors of the Bank, and although we may admit that, at tremendous sacrifices to the commerce of the country, they have succeeded in triumphing over a bad and confused system, yet the good judgment in this respect stands on no other footing than that which might deal with an unrestricted issue—and can be supplemented by a more self-acting process.

As regards the expenditure on the issue, it might here be suggested that the Bank of England conducts it in rather an extravagant manner by the continual destruction of notes, and that otherwise the

items might be diminished. The destruction and reprinting of the notes is not a very important item in the expense, as you observe by the statement. The chief expenditure is in salaries, rent, and compensation to bankers whose issue the Bank has taken. Now, where the system of registering the numbers of the notes prevails, a larger staff of employés is required; and the system, with the renewal of the note, is so useful to the public, and serves as so efficient a protection to the Bank, that I am by no means inclined to recommend its abolition. I may mention that the Bank of France now follows the same plan, registering even the 20-franc notes, keeping back the dirty ones, and only reissuing clean notes. And although the Bank of Prussia has hitherto not registered the small and dirty paper money, yet, as soon as the small notes are abolished and larger amounts issued, it will probably follow a plan similar to that of our Bank.

The only item which, properly speaking, does not belong to the general system of issues, is compensation to bankers. But, supposing this were to disappear, and that altogether a considerable reduction in the expenditure of the issue were made, you will agree with me that, although the Bank would not lose as much as it does now, such economy would have no influence whatever on the numerous anomalies consequent on the fixed limit. There is, however, one item in the expenditure of the issue which, in the form that it is levied, merits severe condemnation. The State (by a compromise well known) receives from the issue 195,000*l.* per annum (originally 180,000*l.*), viz., 60,000*l.* in lieu of stamps, and 135,000*l.* so-called profits. This sum is paid regularly, whether the actual or real profit of the Bank is 300,000*l.*, or whether the loss is 300,000*l.* Is this right and fair? I quite recognise the principle that the State should receive a share in the profits of the issue, and shall speak of this later on; but when such a share bears the character of a partnership in profits, it appears to me that it ought to rise and fall in accordance with the actual results. For if in the first a fixed sum be taken as a compromise, the inference lies near that it is liable to error, to the prejudice of either State or Bank. But, it will be said, what does this matter, and of what consequence are 195,000*l.* in a system where so many hundred millions of transactions take place? The country or the Bank can easily pay it! Arguments like this were used in the free-trade controversy; but the freetrader knows that even the smallest regular tax can have the effect of preventing trade—that the smallest grain of sand can disorganise a whole machinery. A trifling tax can stop the importation of one of our commodities into a foreign country; yet, when it is there, the retail trader can put a profit on it twenty times larger than the duty. It is the question of a tax on the first movement, on the embryo of business, which is expected to develop itself, and which, when developed and grown

strong, can bear bleeding; whereas the same amount of blood-letting on the embryo itself would prove the ruin of its future. So I look upon the origin of our bank note issue, whose few millions are expected to develop a thousand millions of transactions, as an embryo in principle, and any rough and unscientific treatment or detraction from its growing power has a thousand-fold effect hereafter; and where, as in the case of the Bank of England, a yearly settlement or dividend is contemplated and striven for, this rough tax forms an element which must, though perhaps unconsciously, affect the action of the system. The system being that upon which our commerce depends, it is clear that any damage to it injures commerce a hundredfold, and weakens the tax-bearing power of the nation. A more refined plan, then, say, that of the State taking its share in accordance with actual profits made by means of the whole issue system, might improve the banking power of commerce, and might probably give a larger average of profit to the State.

In my discourse so far I have taken the great liberty to criticise the banking department of the Bank of England, that which certain people consider “private,” for, beyond the weekly accounts and the returns which Parliament now and then enforces, the Bank of England publishes nothing regular or irregular concerning its business, and shuns criticism, as it has the right to do. Other State banks, like the Bank of Prussia, or *quasi* State banks, like the Bank of France (whose connection with the State is even less than that of the Bank of England, because it has less legal privileges), fully and freely publish their affairs, giving a complete view of all their transactions in each department of action. Our Bank should be compelled to do so likewise; we cannot presume that it is under the necessity of hiding something; the country ought to be rather proud of what is done by it, independently of the instruction and knowledge which this proceeding would distribute. The plea that the Bank of England banking department is as much a *quasi* private matter as that of other banks, cannot be maintained when it is borne in mind that the issue contract between it and the Government, as representatives of the public, gives the latter the full right to look into all its affairs. Mr. Hankey’s answer to the wish for publishing banker’s balances that, “if it were so “ordered by Parliament, I believe it would lead to no good,” &c., belongs to the dark ages, when Parliaments and courts of law were held secretly for similar reasons. Let us hope that some powerful reformer will come forward on behalf of all these matters.

I have shown you that the theory of the fixed fiduciary issue is wrong, but I have shown also that when it is taken as it stands, and that when propositions are made in accordance with, and in supposed explanation of its working according to the wishes of its defenders,

that almost every one of such propositions in actual practice meets with flat denial or contradiction, and that the whole exhibits a picture of misconceptions and conflicts in which there are but few accords, and these few accords bear more the character of forcible driving, than that of correspondence or unity of interests.

The errors to which such a system leads in theory and practice manifest themselves on all sides. Just now (December, 1872), when the pressure of October and November has passed away, when bullion has again accumulated, we hear it said, "See how the Act has triumphed over the difficulty!" Is there anything in the Act itself that provides for the raising of the rate of interest? Certainly not. The action of the rate of interest is a matter standing alone, apart from the Bank Act. Indeed, if you believe in the correctness of the views which I expressed on p. 485, as regards the competition of the 15 millions of fiduciary notes with bullion, you may with me come to the conclusion that it is not the Act which has triumphed, but "that the rule under which interest attracts bullion has triumphed over the Act." Can business be properly conducted when perversions like the above are accepted as truths?

Without unison and logical connection, no system can work smoothly, and one essential error in construction can throw the whole organisation out of gear. If the existing anomalies could be removed, the power of the Bank, its usefulness to the great commerce of this country would be largely increased, to the benefit of the State, the bankers and merchants, and the community at large, and the shareholders of the Bank itself. The Bank directors have to act according to law, they may be advisers, they cannot be movers in this matter, indeed, they have the right to remain conservative or impassive. But those members of the Government, to whom the initiative in these matters belongs, might be requested to show whether, in their conceptions and actions in reference thereto, they are mere menders of kettles and sharpeners of scissors, or great financial engineers.

It remains for me now to remark that I have purposely abstained from discussing the clauses of the Act of 1844, which relate to the country banker's issue. You may have inferred that I am totally opposed to them, but the question of their abolition can be considered apart from the Bank of England, whose issue might be continued or reformed without reference to such country issues. The only plea for their maintenance is the issue of 1*l.* notes; but, under certain conditions, the Bank of England might issue a limited number of such notes for the accommodation of the public. In any case, the present issues of country bankers are an injustice to the Bank of England.

Suggestions for an Improved System of Issue.

My criticism on the Bank of England issue would hardly appear justified, unless I were prepared to lay before you some plan* for a better system. Bank notes must be used for certain purposes, the question is what are the clear principles upon which they can be so used? Let these principles be established, and surely there will be little difficulty in constructing a system in accordance with them.

What are the pleas upon which the issues of bank notes or paper money are usually made?

The first and foremost is that of the convenient instrument of exchange. Gold is heavy, paper is light; and if I can carry 10*l.*, or 100*l.*, or 1,000*l.* in a piece of paper instead of in weighty money, I prefer the former. You will observe that this plea is based simply on a natural mechanical law, which will bear no disputing.

The second plea is that bank notes, in their capacity as money, can make an addition to the mediums of exchange for the purpose of assisting commerce. Here the fiduciary element, entirely apart from the above mechanical law, comes into consideration.

The third plea is the necessity of the State. In times of war and distress, the State, compelled to lay out heavy sums, is obliged to create an enormous issue of bank notes, and to give them the force of legal tender. This plea again is distinct from either of the two named above.

In exact accordance with these pleas bank notes may be classified as follows: *Firstly*. The bullion note; the foundation of which is nothing but bullion, so that, say, on a store of 20 millions of bullion 20 millions of bank notes, and no more, are issued, for no other purpose than that of furnishing to the public a convenient medium of exchange, and the presumed object of saving wear and tear in metallic currency. None of the great nations make such an issue, although the relative position of bullion reserves to the notes in actual circulation had frequently, or nearly, brought it about, both in England and France.

Secondly. The good bank note; based upon a certain proportion of bullion, the rest of the issue being made on securities, one of the chief objects of such issues being that of poising the admixture of the two elements, so as to maintain, at all events, the convertibility of the note. Our Bank of England issue, the Prussian issue, the French issue before 1870, are examples of this kind; although the manner in which they are severally conducted differs materially as to methods of limitation.

Thirdly. The depreciated bank note issues; in which the excessive fiduciary issue has altogether overwhelmed the metallic basis, so that metal has been set aside and risen to a premium. The con-

vertibility of such notes has of course been lost. The value of the metal varies in accordance with political prospects. Modern examples of this kind are the United States, Russia, Italy, Austria, &c., and France seems on the point, by excessive fiduciary issue, to enter the class.

To these three classes may be added the *fourth class*—the valueless bank note—of which Hayti, where 500 to 700 paper dollars are counted as one dollar silver; and the notes of the defunct Confederate States of America, are examples.

I give this last class merely in order to show the rapid descent into nothing. We can dismiss it, as far as England is concerned; and so we might dismiss the third class, the depreciated bank note, for England is at peace, rich and prosperous; and we may trust that it will never again, as it did at the end of last and beginning of present century, issue depreciated bank notes, which the conquest of independence, wealth, and political supremacy, enabled it to set aside. A reflection as to the actual effects upon the prosperity of a country labouring under a depreciated issue may, however, be useful. Why is it that such countries continually lose bullion, and become poorer? Why should the mere addition of paper currency to metallic currency, which in the first instance actually seems to improve prosperity, make such a country the debtor of other nations, and force it to part with gold, thereby increasing the evil of depreciation progressively? The reason for this will appear plain to you when you reflect what is done in such cases. Take a country which carries on its business, say with 100 million pounds of metallic currency. A war breaks out; the Government requires enormous supplies in material, &c., and pays for them, say in 100 millions of its own notes. The currency of the country becomes 200 millions, and it follows that the prices of all commodities must rise in order to correspond with this increase. The increase is not due to industry or some solid equivalent as a neutralising element; it is more or less sudden, without original countervalue. The classes of contractors, and the individuals and traders connected with them, suddenly become rich, and the apparent plethora of money creates throughout the country considerable extravagance. Not only do native commodities rise in price, yielding large profits, but *all foreign produce* benefits by the change; higher prices and higher profits are made. But the great distinction between native and foreign commodities and trade becomes this: the native producer receives his profit in paper currency, whereas the foreign producer, not able to use this currency at home, must take out his profit in gold, and gold leaves the country accordingly in an increasing ratio. At the same time the high prices of native produce prevent its exportation, and the importation of foreign goods is encouraged to the injury of home

industry. Hence the extraordinary state of the exchanges, and the great struggles which a nation must make afterwards in order to restore the equilibrium. Where immigration, bringing hundreds of thousands of immigrants—where immense resources in land, mines, and the future generally, are in store, as in the United States—the process of recovery is easier. In other countries less favourably situated, the demoralisation, the struggle, the division of the people into richer and poorer, the labouring and suffering, cannot be overcome for long periods.

Now, if this is correct as regards overwhelming issue, it follows that any issue above the neutral bullion basis must have a similar effect, although in a lesser degree. The mere question of the depreciation or par value and convertibility of the note is dependent on the mere amounts of fiduciary issue; the effects on prices remain, and with the consequent separation between national and international trade, become a question of degree. And so, if we pretend that 15 millions of fixed fiduciary issue are a permanently useful addition to our currency, we are in error, for in reality they operate *permanently against* our bullion basis.

Our choice between the classes of bank notes now lies between the bullion note and the good bank note, or in a compromise between the two. Strictly following the pleas put forth, let us first deal with that of the usefulness of the note as a convenient instrument of exchange. It is often said that bank notes save the currency from wear and tear. This is true; but the expenses of bank note issues are larger than the cost of mintage and wear and tear of coin, as the foot-note annexed will show.*

Nevertheless, the plea that bank notes are such easy instruments of exchange is the most legitimate of all, and they must be maintained, if for this purpose alone, independently of the expense.

* Professor Jevons has calculated that on the average a sovereign in circulation becomes light in eighteen years, *i.e.*, that it loses the legal three-quarters grain and the right of tender. This calculation I have verified by researches as to the sums coined by the Mint since 1816, the light coin taken in at the Bank, the exports and imports, and the proportion of light coins remaining in circulation, and substantially agree with him, although I would extend the period to twenty years. But I will go further than he does. Instead of assuming that on the 123,274 grains 0.750 grain is lost, I will take a whole grain, and allow one-quarter grain for costs of recoinage, so that, within twenty years 1.232 grain, or, say, 1 per cent. are absorbed. This would show that the annual wear and tear on coin costs one-twentieth per cent.

The issue of our bank notes costs 180,000*l.* (exclusive of the 195,000*l.* paid to the State) on a circulation taken as high as 30 millions pounds. Let us reduce this by economies to 150,000*l.*, the annual cost of the issue would be equal to one-half per cent., or ten times as high as on coin.

It will be seen how large a margin is left for further reduction before a bank note issue can be said to be cheaper than the issue of coin on the mere ground of wear and tear of coin versus printing, paper, and administration of paper issue.

Bullion notes, *i.e.*, pure bullion notes, are, however, not issued, for they are not only not profitable to the issuer, but involve the large expenditure of printing and administration. No bank would undertake such a bullion issue unless it secured a profit which, at all events, would cover the cost. A small charge on each bank note used by the public is impracticable in a medium of exchange which must be legal tender. The State cannot be asked to bear the costs, for that would be unfair to certain classes of the community. What remains to be done? Take, then, the case of an issue of, say, 20 millions of notes against 20 millions of bullion, at a cost of 100,000*l.* per annum. The 100,000*l.*, at the rate of interest of, say, 4 per cent. would represent the produce of a capital of $2\frac{1}{2}$ millions, so that if on 20 millions of bullion an issue of $22\frac{1}{2}$ millions of notes were made, all being employed at 4 per cent., the cost of the issue would be recovered. On some such plan, which is not necessarily confined to 20 millions, to 100,000*l.* expense, and 4 per cent. interest, but which must be fitted to the case, can the fiduciary or productive element of bank note issue be used, and a contract for its carrying on be offered and accepted by a bank. Later on I shall modify the suggestion again, but so far you may be willing to admit, that some such arrangement can serve to satisfy the plea of convenience of the note to cover its costs, and that an issue so arranged is the best practical bullion note issue.

The plea of convenience being so disposed of, the question remains: Is a further fiduciary issue for the purpose of encouraging commerce at all advisable? In the foregoing, I have sufficiently shown that a permanent addition of a fixed fiduciary issue is the great mistake which underlies the whole of our present system. But if that is so, it is all the more clear also that no issue at all, *i.e.*, the fiat and absolute bullion basis would, in a certain sense, also be an error. For there are times when harvests fail, when mercantile disturbances take place; at other times great discoveries are made, new industrial channels are opened, requiring money, the contingencies of commerce are numerous, they cannot, as they are irregular, be always brought into accord with the currency whose increase is less spasmodic. For these times a temporary increase in the currency is quite justified, even necessary. But as there are also times when greater regularity in trade prevails, during which profits and currency accumulate, the latter over-reaching the commodities, so must such a temporary allowance of fiduciary issue be withdrawn again. That this is the true state of things, all the movements in commerce and the value of money prove abundantly. Now, if thus at one time 2 millions of fiduciary money can be used, at another 20 millions, would it be right to say: Oh! the average is 11 millions, and this must suffice. Nothing can be more false than

such an average, for the very word belies and contradicts its own original basis.

The legislators of 1844 seem to have thought that there were only two ways open to them, viz., either to leave the issue at the discretion of the Bank directors under the old Act—in principle thus granting an unlimited right—or that of establishing a fixed limit. Although the old Act was condemned, yet the discretion which the Bank exercised appears to me to have been quite as efficient as that which they now exercise in forcing the rate of discount. I am far from recommending that we should fall back on the old Act, with its system of liabilities and means, for I fully recognise that discretion, however wisely exercised, is liable to errors, and prefer a machinery with a modicum of discretion only, with less than is now required under the Act of 1844.

Such machinery can be constructed on the two elements:—the *amount of bullion* and the *value of money* or the rate of interest, so as to afford any suitable scale of limitation. If you will kindly listen to me, I will try to lay before you maxims and practical illustrations which may guide you to a conception of the theory involved.

If, as we all know, commerce has its varying phases, which at one time bring about a strong demand for money, indicating a disproportion between the currency and the business to be done, it follows that there are also *neutral times* when both are in due proportion. This level of neutrality we have frequently arrived at in this country; as I have before explained, the large reserves of notes in the Bank show them—and I am entitled I think to leave country bankers' issue out of the question—as far at least as London is concerned. There must have been, consequently, also times when there was a *neutral rate of interest* in connection with the neutral bullion basis. Many people think that this neutral or normal rate of interest may be deduced from that on our national debt, because investments in that are made when money falls to a certain stage of inactivity, viz., 3 per cent. I decline to bind myself to this figure; indeed, in binding oneself in this manner, however plausible the assumption may seem, the first error is committed, and I may presently succeed in showing you that the neutral rate of interest will result from a self-acting process.

In order to start with the two elements, let us suppose there were 20 millions of bullion at the Bank and interest at $2\frac{1}{2}$ per cent. Suddenly (I use this term for convenience of illustration only) there was so strong a demand for money as to make the rate 5 per cent., could we legitimately say: the value of money has doubled, and the 20 millions available must do double duty? If we could say that, we need only issue 20 millions of fiduciary money more to make 40; but then interest should fall back again to $2\frac{1}{2}$ per cent., and so the

original cause of the rise would disappear again. In fact, if we doubled the issue with the doubling of the interest, or increased it with the increase of the latter, we should adopt a species of geometrical progression which could not be maintained on its own ground.

But if there were 20 millions of bullion at $2\frac{1}{2}$ per cent., and if interest rose to 5 per cent., would we be justified in issuing 10 millions (only half of the proportionate increase of interest), say, altogether 30 millions, and keep interest at 5 per cent.? I trust you do not look upon this method of opening my case as involving a mere fanciful little arithmetical problem with which I please myself; it rests upon certain principles in mathematics in connection with limits; and I may succeed in showing you that it works in accord with all the contingencies and practical matters that I am required to deal with.

Accept, then, for the present, my proposal “that the Bank shall have the right to add to the issue made on bullion, an amount of fiduciary issue equal in proportion to the bullion, to one-half of the increase on the normal* rate of interest. On the reduction of the rate of interest, the Bank shall reduce the fiduciary issue in the same proportion, but the Bank shall not be bound to reduce the rate of interest.”

Test, now, this proposition by ordinary examples. Supposing there were, as before, 20 millions of bullion and the rate of interest rose from $2\frac{1}{2}$ to 5 per cent.: when 10 millions more might be issued. If the rate rose to 10 per cent. the additional issue might be 30 millions more. But the rise in the rate of issue must not be taken upon the 20 millions of bullion, for the rise in the rate of interest is, in the first place, due to a withdrawal of bullion; say, then, that bullion has diminished from 20 to 15 millions, when interest stands at 5 per cent., the additional issue might then be made $7\frac{1}{2}$ millions more, so as to give $22\frac{1}{2}$ millions. And if bullion further diminished, say, to 10 millions, interest being at 10 per cent., the total issue might become 25 millions. If the bullion should fall as low as $7\frac{1}{2}$ millions, a rise in the rate of interest to $12\frac{1}{2}$ per cent. would be required to justify the addition thereto of 15 millions of fiduciary issue. Submit now this system to any further tests with any given amount of bullion, and you will observe that it is capable of affording limits which will regulate and satisfy the *demand and enforce the importation of bullion* at the same time. You will see, therefore, that as far as the cautious idea of limiting excess is concerned, that this system is far more effective; and that, in order to produce a state of disproportion between bullion and notes, such as existed in 1857, when bullion was but one-fourth of the issue, a far higher

* The term “normal” will be explained hereafter.

rate of discount would have prevailed, without absolutely excluding further supplies of money.

The present Act practically and presumably exercises the same effect upon bullion in an irregular and spasmodic fashion, as I have shown, whereas, by the method proposed, the process would become regular and self-acting, causing more gradual and less frequent movements both in the rate of interest and the export of bullion.

A rise in the rate of interest has a twofold effect. It induces money to stay at home, and attracts money from abroad, for the Englishman finds a better remuneration for it here than abroad; and the foreigner, when interest with him is cheaper, realises and sends money over here for investment. Now, it must not be for one moment supposed that these movements involve a direct sending over of cash or bullion; they take effect through the changes in the rates of exchange. The English merchant or banker disposes of his claims and bills on abroad, and asks his correspondent for short remittances in return; and the banker abroad, instead of sending bills to England for discount, prefers to hold them in portfolio, because they give him a higher rate of interest. Thus money is supplied to our market on the one hand; on the other hand the discount market is relieved, because bills are withheld from it; the exchanges turn in our favour because our bills are sought abroad, whilst we ourselves sell our foreign claims. A divergence from the par of exchange in our favour, or in favour of the foreigner, may thus exist for a length of time without reaching the bullion points, *i.e.*, the points at which the rate of exchange covers the expense of shipping or receiving bullion; and other exchanges, favourable or unfavourable to us, may, by arbitration, assist in maintaining the transitory state until either the par is recovered or until bullion must be forwarded. In February, 1870, I had the honour to lay before you (see *Journal of the Statistical Society*, pp. 63 to 69), the exact calculations how such bullion shipments between England and France are made, and what their margins are. Nothing can disturb the absolute right of bullion in these movements; and when, as is now the case in France, a premium is paid on gold, it has the effect merely of influencing the nominal rate of exchange, which is but the bullion rate of exchange with the premium added.

Our requirements or obligations as regards bullion can be followed up from the first departure from the pars until the shipment point. At first measures are required to maintain our existing stock of bullion; subsequently they must be strengthened so as to retain in the country the bullion, or more of the bullion, passing *in transitu* through our market, so as to add to our stock. In the third stage the rates of interest must be forced, so as to attract bullion from abroad, to cover a deficit in what we hold. And, when circum-

stances are reversed, and we have bullion enough, or can afford to let that *in transitu* pass, or when, finally, we have a surplus, the natural law of arbitration of exchanges will progressively effect a clearance.

All these operations, however, in their adjustment, involve the same principle of compromise that prevails in buying-and-selling prices, *i.e.*, the middle-price is the ultimate result; each sacrifices one-half of the whole margin; and upon that ground I base my proposal that, in increasing the rate of interest in a double ratio, we obtain the half of its effect, namely, the whole of what we require; whereas, in raising the rate merely in accordance with apparent demand, we should only obtain one-half of the supply.

“But,” you will say here, “that is what the Bank does now, “according to your own showing on p. 485, as that which is the “cause of the violent movements in the rates of discount.” The essential difference between the present fiduciary issue and my proposal will now appear. On p. 485, I state that the Bank is obliged to raise the rate of interest in double ratio, because, when thereby it attracts “money” in the general sense, it obtains half in bullion, half in fiduciary notes, which, with bullion, constitute our money, that the effect is divided between the two, both being attracted from out of the circulation. And that such is the case you will admit, because in most cases, when a raising of the rate attracts bullion, the note reserve generally also increases, and increases frequently without increase in bullion. According to my plan, however, there is no fixed fiduciary issue, and none at all at the normal rates, so that a rise in the rate of interest above them must concentrate its effect solely upon bullion. Take the case of interest of $2\frac{1}{2}$ per cent. or 3 per cent. as normal rates. A glance at the returns shows you that even at these low rates there are large amounts of fiduciary notes in circulation which come in with the bullion; whereas, according to my suggestions, there would be none in circulation, and consequently none to come in. So that if, under my plan, interest is $2\frac{1}{2}$ per cent., if by its rise to 5 per cent. we obtain the $1\frac{1}{4}$ proportion of bullion, the Bank, with its present system, must raise the rate to $7\frac{1}{2}$, so as to attract $2\frac{1}{2}$ of money, of which $1\frac{1}{4}$, the half, is bullion. The validity of the rule of doubling the increase, in accordance with the law of arbitrations of exchanges and the rules of supply and demand, thus remains undisturbed; but in the case of the present issue of the Bank of England, although I have spoken before of the necessity under which it labours to double the increase, I ought to have said then, but better say it now, that, in reality, the Bank must proceed at a quadruple ratio in order to attract bullion.

Again you may say: “but by your own plan you create a kind “of reserve.” True, but the character of this reserve is quite different

from that of the present one; it has no permanent existence, and does not lie like a dead weight upon the market. Its purpose and use can be distinctly appreciated as apart from the question of bullion. It is to meet local demands when local demands show themselves. But the purpose for which it serves principally is this: When the rate of discount rises, money is kept at home and brought in from abroad, and both flow into the Bank. When no fiduciary issue exists, all this money is gold, and upon the same principle enunciated before, one-half comes from the interior, say in sovereigns, one-half from abroad, say in bullion. Thus currency would be withdrawn from our inland intercourse for the sake of attracting bullion. *The reserve of notes to be created by my plan does nothing else than restore the equilibrium in the currency at home; it has no immediate connection with foreign exchanges, and the effect of the rate of interest on foreign bullion remains the same. Do you appreciate the high importance of this action in connection with the whole system as I propose it?*

It can be so appreciated without any direct reference to the principle involved in doubling the ratio of increase in the rate of discount, for it can be alleged that the country may not always require the whole replacement. Now, according to my plan, the Bank would *have the right* or power to make the issue, with the *increase* of interest, but it is not bound to do so; and although it would be obliged to reduce the issue with the reduction of the rate of interest, it is *not obliged* to *reduce* the rate of interest, and can maintain the power of the issue, and the issue itself, *within* the requirements. This marginal power of reserve (in which the discretionary part of the manager's action will find play) will serve to keep the rate of discount more steady, *i.e.*, it will leave a margin against immediate change; it will also produce, by a self-acting process, *the normal state and rate of interest.*

But, it may be said, at other times, the public may require more issue for home trade when the proportion of one-half is not enough. The signs by which this kind of demand is detected are simple enough. As soon as the state of exchanges indicates that we are either on a par with other nations, and that bullion is actually flowing in (the better observance of foreign exchanges is, therefore, necessary), we can relax at all events the forcible measures for its importation, and *must* do so in order to avoid surplus. The extra demand then becomes local, the whole allowance of the issue may then be made, and a further supply of means given by raising the rate, that is, by satisfying and at the same time checking the demand in the opposing proportions of one-half, vindicating a principle of insurance. The higher rate may also continue to attract bullion, but when the whole system has been in operation

there will have arisen, before this, points of adjustment and compensation which will modify many necessities.

But what about speculation, that bugbear against which the Bank must guard, when its necessities go hand in hand with those for bullion? In that case, the whole force of a rise in discount must be brought to bear so as to effect both objects, that of checking speculation and that of attracting bullion. In this sense, I approve, for instance, of the action which the Bank has taken in October and November, 1872—when interest ruled at 6 and 7 per cent.—there being, evidently, not only strong local speculation which had absorbed the free money in the outer market—but when also an unfavourable state of exchanges existed. But, although I fully recognise that this fever of speculation is an element against which strong measures must be taken, I allege, at the same time, that it is fostered and nursed by the present habitual large reserve of notes, and if I start the proposition that if this nursing did not exist, would I be entitled to say that speculation would not be so strong? That, in order to deal fairly between the independent fault of the public and the fault of the Bank's fiduciary issue, speculation would only have half the force? If so, you will agree with me that speculation, if reduced to one-half, might, for the other half of its development, be checked on the way by more moderate rates, *i.e.*, rates not too low and not too high. And this might take place without involving so much foresight on the part of the directors as to the future effects of a present speculative tendency, for as we know, although all shake their heads at the future, yet the Bank directors keep the rate of interest low for long periods, as if no fear existed, until, as I said before, the gigantic spectre suddenly looms through the fog.

If you can believe that, through the abolition of the habitual reserve, interest will not fall so low as it has hitherto done, encouraging speculation, but that, so to speak, it will at all events halve it; that through the non-existence of this reserve we shall be able to obtain bullion in a more direct manner, without raising interest to so high a pitch; if you can believe that, through the better concurrence of mathematical truth and the more intelligent appreciation of the practical elements involved, we shall bring about a more regular state of things, you may deem it worth while to follow up the suggestions here made, of which, for want of time and space, I can only give the outlines.

It is not impossible, as we advance in the definition of the laws of supply and demand, that we may discover the paramount importance of the rules here laid down in all that relates to equilibrium between demand, supply, and price. In special cases its absoluteness may fail because other not visible influences, though in

themselves depending upon the rule, intervene; but in large aggregates—and such an aggregate is represented by the millionfold movements of *ordinary* social and commercial intercourse, in which all factors have already, to some extent, exchanged compensation, until they come to the Bank of England—the rule will be found unfailing.

On this ground I uphold the rule of the one-half effect. You will agree with me generally, that proportions of three-fourths against one-fourth, or seven-eighths against one-eighth, whether they are made purposely and continuously, or by error of judgment spasmodically, cannot produce the equilibrium. The points of logic here arising I need not discuss, but I revert to such disproportions in order to bring out the capability of my system to meet special contingencies when wider questions arise, when, in contradistinction to the *ordinary* social and commercial intercourse (the term used in the last paragraph), *extraordinary* disturbances arise. Such extraordinary disturbances might be revolutions or long wars, requiring a considerable fiduciary issue. In such cases the rate of issue, instead of being at one-half of the increase in interest, might be raised to three-fourths or seven-eighths or more, and thereby assume, at all events, a clearly defined character far preferable to the more or less extravagant allowances, or the undefined loose issues, of which France, the United States, and other countries give us examples. The system is also capable of reduction by adopting measures below the one-half, say, to one-third or one-fourth, if we should ever reach such a state of stability.

The strongest confirmation that, in ordinary times of fair social and political life, the half-rate of which I speak is that which corresponds to the truth, can be gathered from the Bank returns themselves. For although, as I have stated, the majority of the instances show large and (but for the explanations I have given) *seemingly* inexplicable divergencies, there is, on the other hand, a not inconsiderable minority, where the rules applied upon normal rates of interest, are found in full operation. And this is especially the case when the reserve is all idle, and we stand, practically, on the bullion basis. I have here selected (see next page), as fair starting points, the two periods in 1852 and 1871, when the whole amount of the fiduciary issue was in reserve, *i.e.*, when we had the practical pure bullion basis. In 1852 interest was at 2 per cent., it rose to 4 per cent. on 3rd September, 1853, to 5 on the 22nd October, to 8 on 31st October, 1857, to 10 on 11th November; and, under the two columns “Fiduciary circulation” and “What it ought to be by “the half-rates,” you will find how nearly they correspond, whilst, by the column “What it would be by the whole rates,” the unsuitability of such a rate of increase is made manifest. Similar results appear from the reverse process of investigation between the year

1866-67 and 1871, when, in the latter year, interest stood at $2\frac{1}{2}$ per cent.

[000's omitted.]

Date.	Circulation.	Bullion.	Rate of Interest.	Fiduciary Circulation.	What it ought to be by the Half Rates.	What it would be by the Whole Rates.
1852.	£	£	Per cent.	£	£	£
21st June	21,500,	21,500,	2	Nil	Nil	Nil
1853.						
3rd Sept.....	22,400,	16,100,	4	6,300,	8,000,	16,000,
22nd Oct.	23,000,	14,300,	5	8,700,	10,500,	21,400,
1857.						
31st Oct.	20,300,	8,100,	8	12,200,	12,150,	24,300,
11th Nov.	20,100,	6,600,	10	13,500,	13,200,	26,400,
1866.						
18th April....	22,100,	13,000,	6	9,100,	9,100,	18,200,
30th May	25,900,	11,400,	10	14,500,	17,000,	34,000,
26th Sept.....	23,000,	15,600,	5	7,400,	7,800,	15,600,
1870.						
22nd June....	22,400,	20,500,	3	1,900,	2,000,	4,000,
1871.						
31st May	24,100,	24,100,	$2\frac{1}{2}$	Nil	Nil	Nil

I have selected these items almost at random, excepting that I started with the points of bullion basis alluded to, and, in the full general returns for the twenty-seven years you will find a large number of instances where similar results appear. I admit, however, that in the long periods when interest is exceptionally low, these instances are, if not mainly lost, at all events greatly diverging: these are the years of large idle reserves on one hand, and gradual enforced circulation and inflation, when the seeds of corruption are sown and manured, when the fiduciary issue is not required at all, and yet exists in all the glory of its misconception and misuse. There are also divergencies at times of pressure and crisis, when the fixed limit stops all further operation of the principles which I have elucidated. Note the accord between my rule and the state of things in November and December, 1857, when (less the 2 millions extra issue granted through the suspension of the Act) the fiduciary circulation stands at double that of the amount of bullion, interest at the Bank being 10 per cent., in the market 10 to $12\frac{1}{2}$ per cent. My rule would have required $12\frac{1}{2}$ per cent. in order to produce the same proportion, and if the Bank had had authority to increase the issue in this way at $12\frac{1}{2}$ per cent., there would have been no need whatever for the suspension of the Act, whilst the effect on the import of bullion would have been enhanced. If, during the week of 18th March, 1857, when bullion stood at 6,100,000*l.*, and the

fiduciary issue (including the 2 millions extra) at 15,300,000*l.*, the rate had been made $12\frac{1}{2}$ or 15 per cent., it would, by my rule, have produced that issue without violating the Act.

The following scale will serve as an easy means of testing the proportions between bullion and fiduciary circulation. If the normal rate of interest is taken at 2 per cent.—at which no fiduciary issue would seem necessary—the respective higher rates would authorise an issue in the following proportions on bullion:—

2 per cent. Nil	5½ per cent. $\frac{7}{8}$
2½ " $\frac{1}{8}$	6 " $\frac{8}{8}$
3 " $\frac{1}{4}$	7 " $\frac{10}{8}$
3½ " $\frac{3}{8}$	8 " $\frac{12}{8}$
4 " $\frac{1}{2}$	9 " $\frac{14}{8}$
4½ " $\frac{5}{8}$	10 " $\frac{16}{8}$
5 " $\frac{3}{4}$	

But if $2\frac{1}{2}$ per cent. be taken as the normal rate, and it appears to me to be the more correct of the two, the allowable increase would be—

2 per cent. Nil	6½ per cent. $\frac{8}{10}$
2½ " "	7 " $\frac{9}{10}$
3 " $\frac{1}{10}$	7½ " $\frac{10}{10}$
3½ " $\frac{2}{10}$	8 " $\frac{11}{10}$
4 " $\frac{3}{10}$	9 " $\frac{13}{10}$
4½ " $\frac{4}{10}$	10 " $\frac{15}{10}$
5 " $\frac{5}{10}$	11 " $\frac{17}{10}$
5½ " $\frac{6}{10}$	12 " $\frac{19}{10}$
6 " $\frac{7}{10}$	12½ " $\frac{20}{10}$

If the normal rate is taken at 3 per cent., the allowable increase over bullion would be—

2 per cent. Nil	5½ per cent. $\frac{5}{12}$
2½ " "	6 " $\frac{6}{12}$
3 " "	6½ " $\frac{7}{12}$
3½ " $\frac{1}{12}$	7 " $\frac{8}{12}$
4 " $\frac{2}{12}$	8 " $\frac{10}{12}$
4½ " $\frac{3}{12}$	9 " $\frac{12}{12}$
5 " $\frac{4}{12}$	10 " $\frac{14}{12}$

By either of these scales you may test the actual fiduciary circulation with bullion during the last twenty-seven years, in order to ascertain when the former was in excess, when it fell short of requirements, and when it agreed; in other words, when the rate of interest was too low or too high or normal. You will have to make certain allowances for half-yearly and quarterly dividend times, requirements for harvests and other regular matters during the course of the year.

In the table here following, I have noted down the respective

changes in the rate of interest which have taken place during the twenty-seven years; and for the respective times or periods of each rate I have taken the average of bullion, together with the average of the amount of fiduciary issue out in circulation. This will be useful, in order to show again the great divergences at certain times in another form; but alongside of these columns I have placed others, viz., three principal columns, of which the first denotes the fiduciary issue which would have been allowable upon the bullion if the normal rate had been 2 per cent., with the excess actually issued and the excess which the rule would have allowed over the actual issue made. The second principal column (with its two side columns), gives the same thing at a supposed normal rate of $2\frac{1}{2}$ per

TABLE I.—*Showing the Average Amount of Bullion during each Period of Change during the same Periods, together with the Issues which would have been allowed by Margins Over and Under the Allowances and the actual Fiduciary Circulation.*

[000's omitted.]

To Date.		Number of Weeks.	Average of Bullion.	Rate of Interest.	Average of Fiduciary Circulation actually made.	Normal Rate 2 per Cent.		
						What it ought to be.	Issued Over.	Issued Under.
				Per cent.				
1845	11th Oct.	41	15,940,	$2\frac{1}{2}$	5,576,	1,880,	3,696,	—
	1st Nov.	3	13,487,	3	8,621,	3,382,	5,539,	—
	27th Dec. ...	8	12,756,	$3\frac{1}{2}$	7,689,	4,784,	3,950,	—
1846	22nd Aug. ...	34	13,735,	$3\frac{1}{2}$	6,451,	5,151,	1,300,	—
	18th Dec. ...	18	14,861,	3	5,500,	3,715,	1,785,	—
1847	9th Jan.	2	13,905,	3	6,529,	3,476,	3,053,	—
	16th Jan.	1	13,225,	$3\frac{1}{2}$	7,454,	4,959,	2,495,	—
	3rd April....	11	11,169,	4	8,475,	5,589,	2,886,	—
	31st July	17	9,151,	5	9,871,	6,863,	3,008,	—
	11th Sept....	5	8,572,	$5\frac{1}{2}$	9,811,	7,500,	3,311,	—
	9th Oct.	5	8,157,	5	10,083,	6,118,	3,965,	—
	23rd Oct.	2	7,927,	$5\frac{1}{2}$	11,911,	6,936,	4,957,	—
	20th Nov.	4	8,702,	8	11,442,	13,053,	—	1,611,
	27th Nov.	1	9,956,	7	9,013,	12,445,	—	3,432,
	18th Dec.	3	10,815,	6	7,472,	10,815,	—	3,343,
	25th Dec.	1	11,609,	5	6,213,	8,707,	—	2,494,
1848	22nd Jan.	4	12,068,	5	6,554,	9,051,	—	2,497,
	10th June	20	13,386,	4	4,839,	6,693,	—	1,854,
	28th Oct.	20	13,074,	$3\frac{1}{2}$	4,061,	4,903,	—	842,
	30th Dec.	9	13,321,	3	3,889,	3,330,	559,	—
1849	17th Nov.	46	14,102,	3	4,355,	3,525,	870,	—
	29th Dec.	6	15,990,	$2\frac{1}{2}$	1,999,	1,999,	—	—
1850	21st Dec.	51	15,900,	$2\frac{1}{2}$	3,440,	1,987,	1,453,	—
	28th Dec.	1	14,351,	3	4,222,	3,588,	634,	—
1851....	27th Dec.	52	13,939,	3	5,533,	3,485,	2,048,	—

cent., and the third at 3 per cent. It is noticeable that the great over issues occur principally in the first years of the issue; in the latter years they are less, as if the Bank had unconsciously increased its base of interest (to use this term) from 2 to 3 per cent. Upon the whole, the rate of 2 per cent. would authorise an habitual excess of 2,124,000*l.* over the actual issue made; that of 3 per cent., exhibits an excess of 2,214,000*l.* of actual issue over allowance, so that the rate of $2\frac{1}{2}$ per cent. would seem the mean rate. The rate of $2\frac{1}{2}$ per cent. shows a continual allowance of 389,000*l.* over actual issue, but this seems in accord with what I propose, for so much allowance, or even more, could always be kept up in order to meet ordinary contingencies without raising the rate.

of Rate of Discount, with the Average of Fiduciary Circulation (above Bullion) the system proposed at Normal Rates of 2, $2\frac{1}{2}$, and 3 per Cent., and the respective

[000's omitted.]

Normal Rate $2\frac{1}{2}$ per Cent.			Normal Rate 3 per Cent.			Number of Weeks.	To Date.	
What it ought to be.	Issued Over.	Issued Under.	What it ought to be.	Issued Over.	Issued Under.			
£	£	£	£	£	£			
Nil	5,576,	—	Nil	5,576,	—	41	11th Oct.	1845
1,348,	7,273,	—	„	8,626,	—	3	1st Nov.	
2,551,	5,183,	—	1,063,	6,026,	—	8	27th Dec.	
2,757,	3,694,	—	1,144,	5,337,	—	34	22nd Aug.	1846
1,486,	4,014,	—	Nil	5,500,	—	18	18th Dec.	
1,390,	5,139,	—	Nil	6,529,	—	2	9th Jan.	1847
2,645,	4,709,	—	1,102,	6,352,	—	1	16th Jan.	
3,351,	5,124,	—	1,861,	6,614,	—	11	3rd April	
4,575,	5,296,	—	3,050,	6,821,	—	17	31st July	
5,143,	4,668,	—	3,571,	6,240,	—	5	11th Sept.	
4,078,	6,005,	—	2,719,	7,364,	—	5	9th Oct.	
4,756,	7,155,	—	3,302,	8,609,	—	2	23rd Oct.	
9,572,	1,870,	—	1,251,	10,191,	—	4	20th Nov.	
8,904,	109,	—	6,637,	2,376,	—	1	27th Nov.	
7,570,	89,	—	5,407,	2,065,	—	3	18th Dec.	
5,805,	408,	—	3,869,	2,344,	—	1	25th Dec.	
6,034,	520,	—	4,022,	2,532,	—	4	22nd Jan.	1848
4,016,	823,	—	2,231,	2,608,	—	20	10th June	
2,615,	1,446,	—	1,006,	3,055,	—	20	28th Oct.	
1,945,	1,944,	—	Nil	3,889,	—	9	30th Dec.	
1,410,	2,945,	—	Nil	4,355,	—	46	17th Nov.	1849
Nil	1,999,	—	„	1,999,	—	6	29th Dec.	
Nil	3,440,	—	Nil	3,440,	—	51	21st Dec.	1850
1,435,	2,787,	—	„	4,222,	—	1	28th Dec.	
1,394,	4,139,	—	Nil	5,533,	—	52	27th Dec.	1851

TABLE I.—Showing the Average Amount of Bullion during each Period of

[000's omitted.]

To Date.		Number of Weeks.	Average of Bullion.	Rate of Interest.	Average of Fiduciary Circulation actually made.	Normal Rate 2 per Cent.		
						What it ought to be.	Issued Over.	Issued Under.
			£	Per cent.	£	£	£	£
1852	3rd April....	14	18,286,	2½	2,159,	2,286,	—	127,
	24th Dec.	38	20,875,	2	1,636,	Nil	1,636,	—
1853	1st Jan.	1	20,014,	2	3,039,	Nil	3,039,	—
	15th Jan.	2	18,918,	2½	4,595,	2,364,	2,231,	—
	28th May	19	18,128,	3	4,510,	4,532,	—	22,
	27th Aug.	13	17,515,	3½	5,706,	6,568,	—	862,
	10th Sept.	2	16,015,	4	6,317,	8,007,	—	1,090,
	24th Sept.	2	15,233,	4½	6,946,	9,520,	—	2,574,
	31st Dec.	14	14,841,	5	7,151,	11,131,	—	3,981,
1854	6th May	18	14,315,	5	7,551,	10,736,	—	3,185,
	29th July ...	12	12,557,	5½	7,853,	10,987,	—	3,436,
	30th Dec.	22	12,883,	5	7,042,	9,662,	—	2,620,
1855	31st Mar.	13	12,652,	5	6,800,	9,489,	—	2,689,
	28th April....	4	14,477,	4½	5,732,	9,048,	—	3,316,
	9th June	6	16,105,	4	3,648,	8,052,	—	4,404,
	1st Sept.	12	16,115,	3½	4,224,	6,043,	—	1,819,
	8th Sept.	1	13,668,	4	6,474,	6,334,	140,	—
	22nd Sept.	2	12,902,	4½	6,658,	8,064,	—	1,406,
	29th Sept.	1	12,368,	5	7,804,	9,276,	—	1,472,
	29th Dec.	13	10,707,	5½	8,683,	9,368,	—	685,
1856	17th May	20	9,655,	5½	9,580,	8,448,	1,132,	—
	24th May	1	9,939,	6	9,393,	9,939,	—	546,
	21st June	4	9,003,	5	8,166,	6,752,	1,414,	—
	27th Sept.	14	11,737,	4½	8,411,	7,335,	1,076,	—
	4th Oct.	1	10,226,	5	10,699,	7,669,	3,030,	—
	8th Nov.	5	9,120,	6½	11,428,	10,260,	1,168,	—
	29th Nov.	3	9,380,	7	10,271,	11,725,	—	1,554,
	13th Dec.	2	9,951,	6½	8,988,	11,195,	—	2,207,
1857	27th Dec.	2	9,763,	6	8,815,	9,763,	—	948,
	28th Mar.	13	9,525,	6	9,423,	9,525,	—	102,
	13th June	11	9,088,	6½	10,268,	10,224,	44,	—
	11th July	4	10,736,	6	8,608,	10,736,	—	2,128,
	3rd Oct.	12	10,685,	5½	8,733,	9,362,	—	629,
	10th Oct.	1	9,540,	6	10,451,	9,540,	911,	—
	17th Oct.	1	8,925,	7	11,258,	11,156,	102,	—
	4th Nov.	3	8,273,	8	11,842,	12,409,	—	757,
	11th Nov.	1	6,666,	9	13,517,	11,665,	1,952,	—
	23rd Dec.	6	7,744,	10	10,738,	15,488,	—	4,750,
1858	30th Dec.	1	10,906,	8	8,410,	16,359,	—	7,949,
	6th Jan.	1	12,113,	6	7,386,	12,113,	—	4,727,
	20th Jan.	2	13,492,	5	6,605,	10,119,	—	3,514,
	3rd Feb.	2	14,789,	4	5,080,	7,394,	—	2,314,
	10th Feb.	1	15,746,	3½	3,858,	5,905,	—	2,047,
	1st Dec.	42	17,478,	3	2,860,	4,369,	—	1,509,
	29th Dec.	4	18,409,	2½	1,519,	2,301,	—	782,

Change of Rate of Discount, with the Average of Fiduciary Circulation—Contd.

[000's omitted.]

Normal Rate $2\frac{1}{2}$ per Cent.			Normal Rate 3 per Cent.			Number of Weeks.	To Date.	
What it ought to be.	Issued Over.	Issued Under.	What it ought to be.	Issued Over.	Issued Under.			
£	£	£	£	£	£			
Nil	2,159,	—	Nil	2,159,	—	14	3rd April	1852
„	1,636,	—	„	1,636,	—	38	24th Dec.	
Nil	3,039,	—	Nil	3,039,	—	1	1st Jan.	1853
„	4,595,	—	„	4,595,	—	2	15th Jan.	
1,813,	2,697,	—	„	4,510,	—	19	28th May	
3,503,	2,203,	—	1,459,	4,247,	—	13	27th Aug.	
4,803,	1,514,	—	2,669,	3,648,	—	2	10th Sept.	
6,093,	853,	—	3,808,	3,138,	—	2	24th Sept.	
7,901,	—	270,	4,947,	2,204,	—	14	31st Dec.	
7,163,	388,	—	4,771,	2,780,	—	18	6th May	1854
7,536,	317,	—	5,232,	2,621,	—	12	29th July	
6,442,	600,	—	4,294,	2,748,	—	22	30th Dec.	
6,326,	474,	—	4,217,	2,583,	—	13	31st Mar.	1855
5,792,	—	60,	3,619,	2,113,	—	4	28th April	
4,830,	—	1,182,	2,684,	964,	—	6	9th June	
3,223,	—	1,001,	1,342,	2,882,	—	12	1st Sept.	
4,100,	2,574,	—	2,278,	4,196,	—	1	8th Sept.	
5,160,	1,489,	—	3,225,	3,433,	—	2	22nd Sept.	
6,184,	1,620,	—	4,122,	3,682,	—	1	29th Sept.	
6,450,	2,233,	—	4,461,	4,222,	—	13	29th Dec.	
5,793,	3,787,	—	4,022,	5,568,	—	20	17th May	1856
6,958,	2,435,	—	49,69,	4,424,	—	1	24th May	
4,500,	3,666,	—	3,001,	5,165,	—	4	21st June	
4,695,	3,716,	—	2,934,	5,477,	—	14	27th Sept.	
5,113,	5,566,	—	3,408,	7,291,	—	1	4th Oct.	
7,296,	4,132,	—	4,560,	6,868,	—	5	8th Nov.	
8,442,	1,829,	—	6,253,	4,018,	—	3	29th Nov.	
7,960,	1,082,	—	5,804,	3,184,	—	2	13th Dec.	
6,834,	1,981,	—	4,881,	3,934,	—	2	27th Dec.	
6,667,	2,756,	—	4,762,	4,661,	—	13	28th Mar.	1857
7,272,	2,996,	—	5,301,	4,967,	—	11	13th June	
7,511,	1,097,	—	5,368,	3,240,	—	4	11th July	
6,412,	2,321,	—	4,452,	4,281,	—	12	3rd Oct.	
6,678,	3,773,	—	4,770,	5,681,	—	1	10th Oct.	
8,032,	3,226,	—	5,950,	5,308,	—	1	17th Oct.	
9,100,	2,742,	—	6,894,	4,948,	—	3	4th Nov.	
8,665,	4,852,	—	6,666,	6,851,	—	1	11th Nov.	
11,616,	—	878,	9,034,	1,704,	—	6	23rd Dec.	
11,990,	—	3,508,	9,088,	—	678,	1	30th Dec.	
8,479,	—	1,093,	6,056,	1,330,	—	1	6th Jan.	1858
6,746,	—	141,	4,497,	2,108,	—	2	20th Jan.	
4,437,	543,	—	2,464,	2,616,	—	2	3rd Feb.	
3,149,	709,	—	1,312,	2,546,	—	1	10th Feb.	
1,748,	1,112,	—	Nil	2,860,	—	42	1st Dec.	
Nil	1,519,	—	„	1,519,	—	4	29th Dec.	

TABLE I.—Showing the Average Amount of Bullion during each Period of
[000's omitted.]

To Date.	Number of Weeks.	Average of Bullion.	Rate of Interest.	Average of Fiduciary Circulation actually made.	Normal Rate 2 per Cent.			
					What it ought to be.	Issued Over.	Issued Under.	
		£	Per cent.	£	£	£	£	
1859	20th April....	16	18,580,	2½	2,381,	2,322,	59,	—
	27th April....	1	16,571,	3½	4,978,	6,214,	—	1,263,
	25th May	4	16,683,	4½	5,121,	10,427,	—	5,036,
	1st June	1	17,276,	3½	3,996,	6,478,	—	2,582,
	6th July	5	17,499,	3	3,557,	4,375,	—	881,
	28th Dec.	5	16,470,	2½	5,121,	2,059,	3,062,	—
1860	18th Jan.	3	15,503,	2½	15,503,	1,938,	4,451,	—
	25th Jan.	1	14,868,	3	14,868,	3,717,	3,032,	—
	28th Mar.	9	14,466,	4	14,466,	7,233,	—	715,
	11th April....	2	14,063,	4½	14,063,	8,789,	—	196,
	9th May	4	14,143,	5	14,143,	10,607,	—	2,860,
	23rd May	2	14,923,	4½	14,923,	9,327,	—	2,837,
	31st Oct.	23	14,987,	4	14,987,	7,493,	—	1,090,
	7th Nov.	1	13,160,	4½	13,160,	8,225,	—	180,
	21st Nov.	2	12,536,	5½	12,536,	10,969,	—	2,970,
26th Dec.	5	11,801,	5	11,801,	8,851,	—	1,637,	
1861	2nd Jan.	1	11,936,	6	8,575,	11,936,	—	3,361,
	3rd Feb.	6	11,153,	7	9,090,	13,941,	—	4,851,
	20th Mar.	5	11,217,	8	7,866,	16,825,	—	8,959,
	3rd April....	2	12,042,	7	7,569,	15,052,	—	7,483,
	10th April....	1	12,374,	6	7,785,	12,374,	—	4,589,
	15th May	5	12,060,	5	8,112,	9,045,	—	933,
	3rd July	7	11,287,	6	8,264,	11,287,	—	3,023,
	31st July	4	10,926,	6	9,335,	10,926,	—	1,591,
	14th Aug.	2	11,612,	5	8,613,	8,709,	—	96,
	28th Aug.	2	12,116,	4½	7,767,	7,572,	195,	—
	18th Sept....	3	12,742,	4	7,220,	6,371,	849,	—
	6th Nov.	7	13,340,	3½	7,460,	5,002,	2,458,	—
	24th Dec.	7	14,248,	3	5,715,	3,562,	2,153,	—
1862	8th Jan.	2	15,175,	3	5,084,	3,794,	1,290,	—
	21st May	19	15,598,	2½	5,068,	1,949,	3,119,	—
	9th July	7	15,035,	3	5,911,	3,759,	2,152,	—
	23rd July	2	17,006,	2½	5,274,	2,126,	3,148,	—
	29th Oct.	14	16,380,	2	5,131,	Nil	5,131,	—
	31st Dec.	9	14,186,	3	5,748,	3,546,	2,202,	—
1863	14th Jan.	2	13,512,	3	6,745,	3,378,	3,367,	—
	18th Feb.	3	12,846,	4	6,525,	6,423,	102,	—
	28th Jan.	2	13,212,	5	7,290,	9,909,	—	2,619,
	22nd April....	9	14,103,	4	5,969,	7,051,	—	1,082,
	29th April....	1	14,491,	5½	6,377,	5,435,	832,	—
	13th May	2	14,012,	3	6,694,	3,503,	3,191,	—
	20th May	1	13,695,	3½	6,986,	5,135,	1,854,	—
	28th Oct.	23	14,111,	4	7,042,	7,155,	—	13,
	4th Nov.	1	13,195,	5	8,846,	9,896,	—	1,050,
	25th Nov.	3	12,729,	6	8,280,	12,729,	—	4,449,
	2nd Dec.	1	12,434,	7	8,588,	15,542,	—	6,954,
	23rd Dec.	3	12,899,	8	6,984,	19,348,	—	12,364,
	30th Dec.	1	13,682,	7	6,444,	17,102,	—	10,658,

Change of Rate of Discount, with the Average of Fiduciary Circulation—Contd.

[000's omitted.]

Normal Rate 2½ per Cent.			Normal Rate 3 per Cent.			Number of Weeks.	To Date.	
What it ought to be.	Issued Over.	Issued Under.	What it ought to be.	Issued Over.	Issued Under.			
£	£	£	£	£	£			
Nil	2,381,	—	Nil	2,381,	—	16	20th April	1859
3,314,	1,664,	—	1,380,	3,598,	—	1	27th April	
6,673,	—	1,552,	4,170,	951,	—	4	25th May	
3,456,	540,	—	1,439,	2,557,	—	1	1st June	
1,750,	1,807,	—	Nil	3,557,	—	5	6th July	
Nil	5,121,	—	,,	5,121,	—	5	28th Dec.	
Nil	6,399,	—	Nil	15,503,	—	3	18th Jan.	1860
1,486,	5,263,	—	,,	14,868,	—	1	25th Jan.	
4,339,	2,079,	—	2,411,	12,055,	—	9	28th Mar.	
5,264,	2,969,	—	3,513,	10,550,	—	2	11th April	
7,072,	675,	—	4,714,	9,429,	—	4	9th May	
5,769,	721,	—	3,730,	11,193,	—	2	23rd May	
4,497,	1,906,	—	2,497,	12,490,	—	23	31st Oct.	
5,264,	2,781,	—	3,290,	9,870,	—	1	7th Nov.	
7,426,	573,	—	5,223,	7,313,	—	2	21st Nov.	
5,905,	1,309,	—	3,933,	7,868,	—	5	26th Dec.	
7,355,	1,220,	—	5,968,	2,607,	—	1	2nd Jan.	1861
10,038,	—	948,	7,435,	1,665,	—	6	3rd Feb.	
12,339,	—	4,473,	9,347,	—	1,481,	5	20th Mar.	
10,838,	—	3,269,	8,028,	—	459,	2	3rd April	
8,562,	—	777,	6,187,	1,589,	—	1	10th April	
6,030,	2,082,	—	4,020,	4,092,	—	5	15th May	
7,899,	365,	—	5,643,	2,621,	—	7	3rd July	
7,648,	1,687,	—	5,463,	3,872,	—	4	31st July	
5,806,	2,807,	—	3,870,	4,743,	—	2	14th Aug.	
4,846,	2,921,	—	3,029,	5,738,	—	2	28th Aug.	
3,713,	3,487,	—	2,123,	5,097,	—	3	18th Sept.	
2,668,	4,792,	—	1,112,	6,348,	—	7	6th Nov.	
1,425,	4,290,	—	Nil	5,715,	—	7	24th Dec.	
1,518,	3,566,	—	Nil	5,084,	—	2	8th Jan.	1862
Nil	5,068,	—	,,	5,068,	—	19	21st May	
1,506,	4,405,	—	,,	5,911,	—	7	9th July	
Nil	5,274,	—	,,	5,274,	—	2	23rd July	
,,	5,131,	—	,,	5,131,	—	14	29th Oct.	
1,419,	4,329,	—	,,	5,748,	—	9	31st Dec.	
1,351,	5,394,	—	Nil	6,745,	—	2	14th Jan.	1863
3,855,	2,670,	—	2,141,	4,381,	—	3	18th Feb.	
6,106,	1,084,	—	4,404,	2,886,	—	2	28th Jan.	
4,231,	1,738,	—	2,350,	3,619,	—	9	22nd April	
2,898,	3,479,	—	6,037,	340,	—	1	29th April	
1,401,	5,293,	—	Nil	6,694,	—	2	13th May	
2,739,	4,250,	—	1,141,	5,848,	—	1	20th May	
4,233,	2,809,	—	2,351,	4,691,	—	23	28th Oct.	
6,598,	2,248,	—	4,398,	4,448,	—	1	4th Nov.	
8,910,	—	630,	6,364,	1,916,	—	3	25th Nov.	
11,190,	—	2,602,	8,289,	299,	—	1	2nd Dec.	
14,190,	—	7,306,	10,749,	—	3,765,	3	23rd Dec.	
12,313,	—	5,869,	9,121,	—	2,677,	1	30th Dec.	

TABLE I.—Showing the Average Amount of Bullion during each Period of
[000's omitted.]

To Date.		Number of Weeks.	Average of Bullion.	Rate of Interest.	Average of Fiduciary Circulation actually made.	Normal Rate 2 per Cent.		
						What it ought to be.	Issued Over.	Issued Under.
			£	Per cent.	£	£	£	£
1864	20th Jan.	3	12,955,	7	7,816,	16,194,	—	8,378,
	10th Feb.	3	12,577,	8	7,758,	18,886,	—	11,108,
	24th Feb.	2	12,958,	7	6,953,	16,197,	—	9,244,
	13th April....	7	13,145,	6	7,232,	13,145,	—	5,913,
	27th April....	2	11,942,	7	9,107,	14,927,	—	5,820,
	4th May	1	11,778,	8	9,706,	17,667,	—	7,961,
	11th May	1	12,059,	9	8,900,	21,103,	—	12,203,
	25th May	2	12,821,	8	7,797,	19,231,	—	11,434,
	15th June....	3	13,441,	7	6,988,	16,801,	—	9,813,
	3rd Aug.	7	12,909,	6	8,399,	12,909,	—	4,510,
	7th Sept....	5	14,081,	8	8,806,	21,121,	—	12,315,
	9th Nov.	9	12,400,	9	8,390,	21,700,	—	13,310,
	23rd Nov.	2	13,260,	8	6,619,	19,890,	—	13,271,
14th Dec.	3	13,217,	7	6,331,	16,524,	—	10,193,	
28th Dec.	2	13,455,	5½	5,839,	11,773,	—	5,934,	
1865	11th Jan.	2	13,364,	5½	7,135,	11,693,	—	4,558,
	1st Mar.	7	13,720,	5	6,450,	10,290,	—	3,840,
	29th Mar.	4	14,257,	4½	5,493,	8,910,	—	3,417,
	3rd May	5	14,083,	4	7,075,	7,041,	37,	—
	24th May	3	14,134,	4½	7,000,	8,834,	—	1,834,
	31st May	1	14,919,	4	5,991,	7,459,	—	1,468,
	14th June....	2	14,491,	3½	5,955,	5,434,	521,	—
	26th July	6	14,702,	3	7,090,	3,675,	3,315,	—
	2nd Aug....	1	13,604,	3½	8,993,	5,101,	3,892,	—
	27th Sept....	8	13,327,	4	8,334,	6,663,	1,671,	—
	4th Oct.	1	12,440,	4½	10,288,	7,775,	2,503,	—
	11th Oct.	1	11,956,	5	10,356,	8,967,	1,389,	—
	18th Oct.	1	12,005,	6	10,331,	12,005,	—	1,692,
22nd Nov....	5	12,805,	7	8,570,	16,006,	—	7,436,	
27th Dec.	5	13,201,	6	7,270,	13,201,	—	5,913,	
1866	3rd Jan.	1	12,380,	7	9,397,	15,475,	—	6,078,
	31st Jan.	4	12,216,	8	9,005,	18,324,	—	9,319,
	21st Feb.	3	12,548,	8	8,466,	18,822,	—	10,356,
	14th Mar.	3	13,231,	7	7,444,	16,539,	—	9,095,
	2nd May	7	13,236,	6	8,758,	13,236,	—	4,478,
	9th May	1	12,295,	7	10,050,	15,369,	—	5,319,
	15th Aug.	14	13,025,	10	12,457,	26,050,	—	13,593,
	22nd Aug.	1	13,691,	8	10,491,	20,536,	—	10,045,
	29th Aug.	1	14,732,	7	9,166,	18,415,	—	9,249,
	5th Sept....	1	15,098,	6	9,123,	15,098,	—	5,975,
	26th Sept....	3	15,229,	5	8,050,	11,422,	—	3,372,
	7th Nov.	6	15,605,	4½	8,309,	9,753,	—	1,444,
	19th Dec.	6	17,399,	4	5,537,	8,699,	—	3,162,
26th Dec.	1	18,308,	3½	3,625,	6,865,	—	3,240,	
1867	6th Feb.	6	18,176,	3½	4,932,	6,816,	—	1,884,
	29th May	16	18,370,	3	4,473,	4,592,	—	119,
	24th July	8	20,970,	2½	2,589,	2,621,	—	32,
	24th Dec.	22	21,925,	2	2,106,	Nil	2,106,	—

Change of Rate of Discount, with the Average of Fiduciary Circulation—Contd.

[000's omitted.]

Normal Rate 2½ per Cent.			Normal Rate 3 per Cent.			Number of Weeks.	To Date.	
What it ought to be.	Issued Over.	Issued Under.	What it ought to be.	Issued Over.	Issued Under.			
£	£	£	£	£	£			
11,695,	—	3,879,	8,652,	—	834,	3	20th Jan.	1864
13,835,	—	6,077,	10,481,	—	2,723,	3	10th Feb.	
11,663,	—	4,710,	8,650,	—	1,597,	2	24th Feb.	
9,201,	—	1,969,	6,572,	660	—	7	13th April	
10,747,	—	1,640,	7,961,	2,146,	—	2	27th April	
12,955,	—	3,249,	9,815,	—	109,	1	4th May	
15,670,	—	6,770,	12,059,	—	3,159,	1	11th May	
13,264,	—	5,467,	10,760,	—	2,968,	2	25th May	
12,097,	—	5,109,	8,960,	—	1,972,	3	15th June	
9,036,	—	637,	6,454,	1,945,	—	7	3rd Aug.	
15,489,	—	6,683,	11,734,	—	2,674,	5	7th Sept.	
16,120,	—	7,730,	12,400,	—	4,010,	9	9th Nov.	
14,586,	—	7,767,	11,050,	—	4,431,	2	23rd Nov.	
11,895,	—	5,564,	8,811,	—	2,480,	3	14th Dec.	
8,073,	—	2,134,	5,767,	72,	—	2	28th Dec.	
8,618,	—	1,483,	5,707,	1,428,	—	2	11th Jan.	1865
6,860,	—	410,	4,573,	1,877,	—	7	1st Mar.	
5,703,	—	210,	3,564,	1,929,	—	4	29th Mar.	
4,225,	2,843,	—	2,347,	4,728,	—	5	3rd May	
5,654,	1,346,	—	3,526,	3,474,	—	3	24th May	
4,476,	1,515,	—	2,485,	3,406,	—	1	31st May	
2,898,	3,057,	—	1,276,	4,679,	—	2	14th June	
1,470,	5,520,	—	Nil	7,090,	—	6	26th July	
2,721,	6,272,	—	1,134,	7,859,	—	1	2nd Aug.	
3,998,	4,336,	—	2,221,	6,113,	—	8	27th Sept.	
4,976,	5,312,	—	3,110,	7,178,	—	1	4th Oct.	
5,978,	4,378,	—	3,985,	6,371,	—	1	11th Oct.	
8,404,	1,909,	—	6,002,	4,311,	—	1	18th Oct.	
11,524,	—	2,954,	8,570,	—	—	5	22nd Nov.	
9,240,	—	1,970,	6,600,	670,	—	5	27th Dec.	
11,142,	—	1,745,	8,254,	1,143,	—	1	3rd Jan.	1866
13,437,	—	4,432,	10,180,	—	1,175,	4	31st Jan.	
13,792,	—	5,326,	10,455,	—	1,989,	3	21st Feb.	
11,907,	—	3,463,	8,820,	—	1,376,	3	14th Mar.	
9,265,	—	507,	6,618,	2,140,	—	7	2nd May	
11,065,	—	1,015,	8,198,	1,825,	—	1	9th May	
19,526,	—	7,069,	15,196,	—	2,739,	14	15th Aug.	
15,060,	—	4,569,	11,341,	—	750,	1	22nd Aug.	
13,258,	—	4,092,	9,821,	—	655,	1	29th Aug.	
10,568,	—	1,445,	7,549,	1,674,	—	1	5th Sept.	
7,615,	435,	—	5,076,	2,974,	—	3	26th Sept.	
6,242,	2,067,	—	3,901,	4,408,	—	6	7th Nov.	
4,220,	1,317,	—	2,900,	2,637,	—	6	19th Dec.	
3,662,	—	37,	1,526,	1,099,	—	1	26th Dec.	
3,635,	1,297,	—	1,515,	3,417,	—	6	6th Feb.	1867
1,837,	2,636,	—	Nil	4,473,	—	16	29th May	
Nil	2,589,	—	„	2,589,	—	8	24th July	
„	2,106,	—	„	2,106,	—	22	24th Dec.	

TABLE I.—Showing the Average Amount of Bullion during each Period of
[000's omitted.]

To date.		Number of Weeks.	Average of Bullion.	Rate of Interest.	Average of Fiduciary Circulation actually made.	Normal Rate 2 per Cent.		
						What it ought to be.	Issued Over.	Issued Under.
			£	Per cent.	£	£	£	£
1868	18th Nov.	47	20,003,	2	4,034,	Nil	4,034,	—
	2nd Dec.	2	17,072,	2½	6,304,	2,135,	4,169,	—
	30th Dec.	4	17,031,	3	6,065,	4,258,	1,807,	—
1869	31st Mar.	13	17,217,	3	6,228,	4,304,	1,924,	—
	5th May	5	15,874,	4	7,906,	7,937,	—	31,
	9th June	5	16,280,	4½	7,114,	1,017,	6,097,	—
	23rd June	2	19,227,	4	4,401,	9,613,	—	5,212,
	14th July	3	18,706,	3½	5,061,	7,105,	—	2,044,
	18th Aug.	5	19,505,	3	4,326,	4,876,	—	550,
	3rd Nov.	11	18,831,	2½	4,831,	2,354,	2,477,	—
	29th Dec.	8	17,812,	3	5,131,	4,453,	678,	—
1870	20th July	29	19,256,	3	3,845,	4,814,	—	969,
	27th July	1	18,395,	4	5,782,	9,197,	—	3,415,
	3rd Aug.	1	17,958,	5	6,473,	13,468,	—	6,995,
	10th Aug.	1	18,230,	6	5,550,	18,230,	—	12,680,
	17th Aug.	1	18,812,	5½	4,720,	16,460,	—	11,740,
	24th Aug.	1	19,107,	4½	4,139,	11,942,	—	7,803,
	31st Aug.	1	19,748,	4	3,609,	9,874,	—	6,265,
	14th Sept.	2	20,421,	3½	2,850,	7,783,	—	5,933,
	24th Sept.	2	21,245,	3	1,940,	5,311,	—	3,371,
	28th Dec.	13	21,508,	2½	2,154,	2,689,	—	535,
1871	1st Mar.	9	21,315,	2½	2,381,	2,664,	—	283,
	12th April....	6	21,321,	3	2,314,	5,330,	—	3,016,
	14th June	9	23,391,	2½	1,038,	2,924,	—	1,886,
	12th July	4	25,839,	2¼	—	1,615,	—	—
	20th Sept.	10	24,701,	2	653,	Nil	653,	—
	27th Sept.	1	20,303,	3	4,710,	5,076,	—	366,
	4th Oct.	1	19,668,	4	6,627,	9,834,	—	3,207,
	15th Nov.	6	21,087,	5	4,454,	15,815,	—	11,361,
	29th Nov.	2	23,620,	4	724,	11,810,	—	11,086,
	13th Dec.	2	23,860,	3½	347,	8,947,	—	8,600,
	27th Dec.	2	24,320,	3	29,	6,080,	—	6,051,

The close study of this table, *i.e.*, the excesses over and below a regulated issue, can be brought into connection with many features in the commercial history of the country during the last twenty-seven years, showing the fruits of the Bank's liberality in the early years of the issue, the rapid development when money was too cheap, of speculative enterprise and "company-mongering," the times of "calls," of losses, disappointments, crisis—and it distinctly shows to what extent experience has guided; to what extent the system has failed to guide those who manage the use of the issue.

Change of Rate of Discount, with the Average of Fiduciary Circulation—Contd.

[000's omitted.]

Normal Rate $2\frac{1}{2}$ per Cent.			Normal Rate 3 per Cent.			Number of Weeks.	To Date.	
What it ought to be.	Issued Over.	Issued Under.	What it ought to be.	Issued Over.	Issued Under.			
£	£	£	£	£	£			
Nil	4,034,	—	Nil	4,034,	—	47	18th Nov.	1868
„	6,304,	—	„	6,304,	—	2	2nd Dec.	
1,703,	4,362,	—	„	6,065,	—	4	30th Dec.	
1,722,	4,506,	—	Nil	6,228,	—	13	31st Mar.	1869
4,732,	3,174,	—	2,646,	5,260,	—	5	5th May	
6,512,	502,	—	4,070,	3,044,	—	5	9th June	
5,765,	—	1,364,	3,205,	3,037,	—	2	23rd June	
3,741,	1,320,	—	1,559,	3,502,	—	3	14th July	
1,951,	2,375,	—	Nil	4,326,	—	5	18th Aug.	
Nil	4,831,	—	„	4,831,	—	11	3rd Nov.	
1,781,	3,350,	—	„	5,131,	—	8	29th Dec.	
1,926,	1,919,	—	Nil	3,845,	—	29	20th July	1870
5,518,	264,	—	3,066,	2,716,	—	1	27th July	
8,979,	—	2,506,	5,986,	487,	—	1	3rd Aug.	
12,761,	—	7,211,	9,115,	—	3,560,	1	10th Aug.	
10,286,	—	5,546,	7,938,	—	3,218,	1	17th Aug.	
7,643,	—	3,504,	4,777,	—	538,	1	24th Aug.	
5,824,	—	2,215,	3,291,	—	318,	1	31st Aug.	
4,084,	—	1,234,	1,701,	1,149,	—	2	14th Sept.	
2,125,	—	185,	Nil	1,940,	—	2	24th Sept.	1871
Nil	2,154,	—	„	2,154,	—	13	28th Dec.	
Nil	2,381,	—	Nil	2,381,	—	9	1st Mar.	
2,182,	182,	—	„	2,314,	—	6	12th April	
Nil	1,038,	—	„	1,038,	—	9	14th June	
„	—	—	„	—	—	4	12th July	
„	653,	—	„	653,	—	10	20th Sept.	
2,030,	2,680,	—	„	4,710,	—	1	27th Sept.	
5,900,	727,	—	3,278,	3,349,	—	1	4th Oct.	1871
10,504,	—	6,050,	7,012,	—	2,558,	6	15th Nov.	
7,086,	—	7,362,	3,936,	—	3,212,	2	29th Nov.	
4,772,	—	4,425,	Nil	347,	—	2	13th Dec.	
2,432,	—	2,403,	„	29,	—	2	27th Dec.	

The following table arranges these items at the three respective rates, so that the eye may glance over them and see how the balances lie on the whole and during the respective years:—

TABLE J.—Showing the Excesses of Fiduciary Issues, and the Excesses of Allowances over Actual Fiduciary Issues made at the respective Nominal Normal Rates of 2, 2½, and 3 per Cent.

NORMAL RATE AT 2 PER CENT.																																		
Years	Millions Issued Over Normal Allowance.															Millions Issued Under Normal Allowance.																		
	½.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	½.	Over ½.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	
1845...	.	.	.	2	.	1
'46...	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'47...	.	.	.	3	3	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'48...	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'49...	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'50...	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'51...	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'52...	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'53...	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'54...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'55...	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'56...	.	.	4	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'57...	2	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'58...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'59...	1	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'60...	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'61...	1	1	.	2	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'62...	.	.	1	2	2	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'63...	1	1	1	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'64...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'65...	1	1	2	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'66...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'67...	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'68...	.	.	1	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'69...	.	1	1	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'70...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'71...	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

NORMAL RATE AT 2½ PER CENT.																																	
Years	½.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	½.	Over ½.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1845...	.	.	.	.	.	2	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'46...	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'47...	3	.	1	.	.	.	2	3	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'48...	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'49...	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'50...	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'51...	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'52...	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'53...	.	1	1	2	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'54...	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'55...	1	.	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'56...	.	.	3	1	3	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'57...	.	.	.	1	4	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'58...	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'59...	.	1	2	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'60...	.	3	2	3	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'61...	1	.	2	3	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'62...	.	.	.	.	1	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'63...	.	.	2	3	1	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'64...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'65...	.	.	3	1	1	2	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
'66...	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

These tables will also be useful in leading to a clearer appreciation of what I have called "normal" rates of interest. My proposition implies, as a matter of course, that the fiduciary issue made should diminish as the rate of interest declines, until, when the latter reaches its normal state, the fiduciary part should altogether disappear. And here you will perceive what I mean by the self-acting process, which should determine this so-called normal rate. The Bank can allow the whole fiduciary issue to disappear without making a further decline in the rate of discount, and if it can maintain such a higher rate (than the present normal rate), or 3 per cent., on a pure bullion issue, such a rate becomes, *de facto*, the normal rate.

Such supposed higher rate, however, is subject to the checking power of competition in the market; for the Bank, as the central institution, is but the factor of the market, and under the arrangement, in its dependence upon the public, it would have no absolute power of its own in defiance of its constituents. If it held the rate too high, for the purpose of obtaining bullion, without issuing fiduciary notes, it would lose business which the market would take up. Hence the *necessary store of bullion would settle itself in a natural way by its competition with the sovereigns or bullion notes in the open market*. If the Bank held the rate too low, it would be overwhelmed with business. This same principle of competition would apply to all stages of interest and all stages of the issue, as in some measure it does now.

For the commencement of the new issue it would, however, be necessary to establish some starting point as the normal rate to begin with. It is of little importance whether this rate be 2 or $2\frac{1}{2}$ or 3 per cent., for as after all, from the previous remarks, its influence is halved or quartered, there would be question only of this fractional effect upon proportions of increase of either one-eighth, or one-tenth, or one-twelfth. And whether the one or the other be adopted, or whether they were changed during the course of the experience made, any one of the three rates would afford a firm clear ground, without detracting from the definite and comprehensive character of the arrangement. Nevertheless, as, according to the figures shown, the choice lies between 2 as too low and 3 as too high (and for this reason normal rates of below 2 or above 3 are already out of the question), the proper figure would be $2\frac{1}{2}$ per cent.; and this, as I have stated, gives the slight advantage in favour of issue which is desirable as a margin. So far, I think, we can follow the course of experience as a guide, for, when experience shows an infallible rule, it obtains the value of a principle.

If the arrangement be carried out, will it be simple in its control,

or more complicated than now? The first thing which the managers of the Bank have to watch is bullion. They may maintain the rate of discount, without fiduciary issue, at any figure they like, until they have enough—or, rather, until the country has enough—for, if the Bank overdoes it, the competition of the market will check it. But, whether the bullion reserve be large or small, they can always observe the rates of exchange, and, independently of the market, protect their store of bullion whenever these exchanges, or their balance, appear against us. I do not know whether the close observance of the exchanges now forms part of the Bank's policy; I presume it does, but have no means of judging of the accuracy of the foundations. My impression is that there are very few people in this country who have more than a superficial knowledge of exchanges as a whole, and who can calculate to a point the results of shipments of bullion according to freight, charges, Mint and Bank regulations, stamps, and interest; yet upon such minute points do the exchanges turn; and the information is easily obtained and kept up. Our stock of bullion at the Bank is in immediate contact with exchanges, as the reservoir between our circulating coin and foreign trade; and nothing is more important than a close watch of all the channels through which it is supplied or exhausted. Any error, which might be avoided by quick appreciation and forestalled by a timely movement in the rate, may cause the loss of a million or more of bullion; and we all know how anxious we are when a few hundred thousands, or even 100,000*l.*, are withdrawn—*vide* the “money articles.” You will agree with me that this matter of the stock of bullion stands on its own merits, and that less local prejudice, or rather, more cosmopolitan intelligence, may lead to a better appreciation of exchange matters. And when these are fully brought to bear, the operation of guiding the bullion store will become more automatic than it is at present—more rule will prevail and less discretion be required; and although the latter will still have its play, and most effectively if occasion calls for it, you may admit that, on the whole, the control over the bullion can be exercised with more certainty, therefore with more simplicity, upon my plan than under the present system.

The next thing the Bank would have to control is the fiduciary issue for satisfying the local demand. Finding the exchanges favourable, it can, without fear, make the issue; indeed, it must make it so as to prevent not only too large an accumulation of bullion, but also on account of the competition of the open market; and when it reduces the rate, and with it the issue, it just performs that beneficent and automatic action which marks the approach between two contending forces, and therefore enables the judgment to be formed at once, because the effect is brought about at once.

This more regulated proceeding does not, as I have said before, prevent the directors from giving to the country all the benefit of their wisdom and discretion, and they can exercise the latter with all the more immediately visible results just because certain main points are no longer subject to doubt.

And if, in thus meeting the discount market in either way, the directors were able to secure to themselves a regular supply of bills—that is, if the respective resources of the Bank, as well as the fiduciary issue, sought to meet the requirements regularly, without repelling them excessively at one time, and at other times spasmodically attracting them, if the “Discounted bills and temporary advances” obtained anything like regularity (as they ought to do in every bank) the *Bank would supply an additional element of compensation* for regulating the market, viz., a reasonable absorption of the demand for money. How this element of compensation, which, as perhaps the most important of all, I must ask you now to add to the other elements spoken of as working in the same direction, for halving (so to speak) abrupt differences, has hitherto been treated, appears from the returns furnished.

The third subject which the directors must watch, is the ordinary one of general mercantile credit and that of individual credits. And here let me remark, that in spite of the high and, I may say, noble intention of those who rule the Bank, in spite of excellent machinery and powerful position, the Bank cannot control matters of general or special credit unless it is in regular and almost unbroken connection with the market, in continuous practical connection in which matters of fact and actual insight replace matters of hearsay. Through these means of regular connection only can the Bank retain its power and influence in the market, and it is not enough that it should merely have a hand in it, but as the richest and best institution it should be able to take the lead, so that it may be enabled to retain sufficient influence in general mercantile credit, the term “general” here being an element in the guidance of a policy. Without this general and continuous policy the Bank is liable to run an eccentric course, by which at certain times it encourages, at other times suddenly discourages a particular class of business, as the experience of bankers and discounters has shown. Further, when this practical share in the business of the country is gained, it will pay, and will bring with it a certain perfection of arrangements, which, with a broken course, remain ineffective for some time, in spite of every intelligent and high minded endeavour, as far as excellency of control is concerned. Many bankers and others may be able to appreciate these remarks and estimate them accordingly.

That this share of the Bank in the real business of the country

can be recovered when the present misconceptions as to fiduciary issue are removed, and a better system is substituted, is not a matter of doubt in my mind. Is it not an astonishing fact, that whereas all other national banks have increased their business in accordance with the growth of the respective nation's trade and beyond (see Bank of France, Prussia, &c.); and whereas, our own joint stock banks have shown such splendid prosperity, whereas our trade has trebled since 1844, the Bank of England should alone have lagged behind, scarcely improving its position? It is true that during late years there have been larger deposits, the Bank has also more bullion; but this increase bears no sensible proportion to that of the general prosperity. And although the stock of bullion is larger, does it not appear as if this were consequent upon some change of policy in answering demands through the reserve—*i.e.*, in not acceding to them—does it not seem as if this slight improvement was rather due to some mysterious and painful effort? Then where lies the fault?

In my opinion, the Bank of England, with its gigantic capital and its superior management, ought to hold an amount of good bills largely in excess of that of any other bank or an aggregate of them, it ought to pay larger dividends than it does now, and thus, by making larger profits, be able to meet the public demands more fairly, and thereby bring into action another factor of compensation, through whom excesses of interest, excesses of import and export of bullion, excesses of speculation, with all their concurrent excrescences, may find amelioration for the mutual benefit of the Bank and all classes of the community, if not of the great system of commerce all over the world. If the idle note reserve were abolished, the deposits of the Bank, the real monetary power of the country, would enter again into their legitimate rights, and be better invested; it is now the deposits which rescue the Bank from the false position of the fiduciary issue; whereas the power of reserve contained in the proposal I make here would come to the assistance of the deposits. Under such altered circumstances, the question might even be mooted whether the Bank should not pay interest on certain classes of such deposits, as other Banks do.

The plan proposed by me demands, of course, a revision of the arrangement as to the share of profit which the State receives. The State is entitled to a share, not so much for the sake of State necessities, as in vindication of a principle. For the privilege and authority given to a bank to issue fiduciary notes resemble the loan of a capital; and if the Bank had this capital free of interest, the privilege would be too much, and become an odious monopoly. The

fairest way of looking upon this matter is that of regarding the fiduciary issue as an interest-bearing deposit, upon the usual banking rules. Under the present Act the State receives 195,000*l.* per annum. I have already stated my objection to that, and propose that the State's profit should in future be in exact accordance with the actual issue made and the actual profit. If at any time an extra issue of, say, 10 millions were made, employed at 5 per cent., the gross profit would be 500,000*l.*; an issue of 5 millions, at 4 per cent., would give 200,000*l.*; an issue of 12 millions, at 8 per cent., would give 960,000*l.* At other times, there would be no issue and no profit. Referring now to what I have said before respecting the cost of bullion notes, I would propose that from the produce of the fiduciary issue there should first be deducted the expense attendant the issue. Among the items of this expenditure are several which may be reduced, viz., bankers' compensation (which expires at the expiration of the present issue); the expenses for the Bullion Office, &c., as not properly belonging to the fiduciary issue; other economies might be made; and in consideration of the fact that the Bank otherwise, through the same system, effects certain economies in its banking department, the Bank, or a bank, might be induced to accept the note contract as involving an annual expenditure of 120,000*l.* There would then remain upon the gross profits named above, balances of 380,000*l.*, 80,000*l.*, and 840,000*l.* At other times there would be a fiduciary issue below 5 millions, just covering or scarcely covering the expenditure; and there may be times when there is no necessity for any fiduciary issue at all. These times should be debited to the issue account; so that the whole arrangement stands on a pure, equitable basis, without the shadow of suspicion as to one-sidedness. The balances remaining should then be divided between the State and Bank, either by crediting the State with the interest at one-half or 1 per cent. below the Bank rate, or by allowing the Bank a proportionate share by way of *del credere*, the greater portion of the produce, of course, going to the State. But the Bank should suffer no loss whatever, as, according to my showing, it does now, and for the advantage gained, including the higher interest obtainable on its deposits, the Bank might be satisfied with but a small share on the net profits of the fiduciary issue.

It is quite true that in such a case the Chancellor of the Exchequer could no longer count on the regular annual income from the Bank of 195,000*l.* Instead of that he may sometimes go without, at other times receive much larger sums; and the more equitable operation of the whole may, after all, bring better results. I am of opinion that the actual working of the system would result in far more regular annual profits. Certain it is that, if we succeed in avoiding crises and their baneful consequences, there

will be a considerable increase in the tax-bearing power of the country. Further, if the Bank Act requires amendment at all, such amendment must either be the total abolition of the issue, and with it that of the 195,000*l.*, or some more elastic plan in lieu of the present fixed limit, and to such elasticity the fixed payment to the State could not be reconciled. It is time altogether that our statesmen and financiers should open their eyes to the conflict between such an item in the Budget and the great diverse interests, the very foundation of it all, at stake in this instance; and that, instead of adhering tenaciously to such small tax, for the mere sake of the budget, they should gain the conception that, by abolishing it they might confer an incalculable benefit upon the public, the Bank, the State, *and* the budget.

It remains for me to state, that my proposal requires no essential alteration in the constitution of the Bank. The separation between the issue department and the banking department may be maintained as it is now, and there would, at one time, appear bullion on one side, notes on the other, without Government and other securities; at another time, certain sums in Government and other securities would appear in order to account for the increase of issue. These securities might be transferred from the banking department as the case may arise, to serve, as the State debt and other securities do now, as security for the issue. The proceeding is not new, for in 1857 the Bank transferred two millions of its Government securities from the banking department to the issue, a proceeding which, in the minds of some illogical financiers, was designated as the "safety valve" to the present system. You see how this resembles my plan, with this difference, that I require the safety valve to be in continuous operation for the regulation of the machinery, whereas these alchemists want to wait with its application until the machinery has whirled itself into partial destruction, and until the boiler is on the point of bursting.

For my part I consider the security and guarantee of the Bank itself perfect, and further, I think that in the case of issue "Other securities," notably fair bills of exchange realisable, are the proper and legitimate guarantees. Other State banks think so too, but upon that point we need open no controversy; the British public looks to Government and other securities, and these can be furnished by the Bank, to stand as directly applicable to the issue, the interest on them belonging to the Bank. No change whatever would be required between the Bank and the public. The note system would go on as before, and nobody would be the wiser for the alteration but those who study the weekly accounts of the Bank, who would find that the large, inexplicable, and demoralising "reserves" of notes were no longer in the account, but they would also be aware

that, in spite of the disappearance of this item money could be had at any time on fair principles of compensation, to meet contingencies.

I claim that the plan I have suggested will, when in operation, do the following:—

Firstly. It will, by a self-acting process, determine the amount of bullion which is suitable to the trade of this country, both as stock in the Bank, and as circulating coin in the country.

Secondly. It will check the export of bullion without disturbing the amount of currency at home, for the fiduciary power arising will replace the currency drawn in from the inland trade, and it will enable us to dispose of a surplus of bullion against profitable investment in a gradual and regular manner.

Thirdly. It will, by a self-acting process, determine a normal rate of interest, the departures from which will not be so violent or excessive as they are now, and thereby it will counteract undue speculation as well as ameliorate the severe effects of the results of speculation.

Fourthly. It will altogether put in force elements of compensation from which the commerce and prosperity of this country will derive advantages.

It remains for me only to notice other suggestions, which have been made from time to time in reference to an improved issue. One gentleman has lately proposed that the Bank of England, instead of holding English Government securities for the guarantee of the issue, should hold foreign securities, so that at any time they could be sent abroad to obtain the gold necessary for us. The suggestion is not suitable, if only for the question of buying-and-selling-price. Nor can the Bank of England hold foreign bills of which the full value may be realised. As a *quasi* national bank, the storehouse of the country's wealth, it has an implied degree of political importance which must be kept free of foreign securities of any kind. That our other banks and private bankers would do well to invest in foreign bills, so as to obtain a turn of exchange in our favour when necessary, I admit, and in the paper which I read before this Society in February, 1870, I advocated this policy. In order to carry it out, the science of exchanges and the considerations of credit connected with it must first be better understood in this country.

Other suggestions have been made, the most current one being that of the insufficiency of the 15 millions of fiduciary issue, as compared to the larger store of bullion, and the increase of the country's trade. So it has been suggested that this 15 millions should be increased to 20 or 25 millions. If you should agree with

the evidence and the views I have here laid before you, you will admit that such an increase in the fixed fiduciary issue could only tend to increase the present gigantic evils from which we suffer.

The more reasonable of the reformers begin to perceive that the issue must be elastic, so as to admit of extension without neglecting the principle of concurrent limits. Several plans may be suggested for this purpose, but none has as yet been definitely proposed ; you will also admit that, in the main, the controlling and compensating factors should be found in the system itself, and not be dependent upon an outside assumption, just as little as any scientific subject, which, having the germ of vitality in itself, can be correctly and logically developed by dependence on any assumption or maxim outside its proper sphere. When such outside assumption carries an alchymistical semblance of being connected with financing, and is, falsely, taken as a guide, confusion becomes worse confounded. Such is the case with the idea of fixed issue, and the “stability” ensuing therefrom in our present arrangement, until some of our best thinkers have despaired of ever unravelling the mystery. Such would also be the case with so-called fixed sliding scales which assume a definite amount of bullion with definite rates of interest.

The question which those who peruse this paper must ask themselves is this : Does the proposal here made contain that great principle of prudence and conservatism which at all events is implied in the present fixed issue and its limitation ? Let the proposal be tested by examples, *i. e.*, by calculation, and it will be found that, if anything, it is more prudent. If this point be gained, the most conservative supporters of the present issue, whose just conservatism is founded on the fear that any new proposal might lack this element of prudence, may be willing to admit that the plan here suggested combines this desirable characteristic with the element of productiveness.

MISCELLANEA.

CONTENTS :

	PAGE		PAGE
I.—The Pedigree of the United States	541	III.—Military Expenditure on the Colonies	544
II.—Pawnbrokers	543	IV.—Cotton Blooming	544

I.—*The Pedigree of the United States.*

FROM the *Pall Mall Gazette*:—

“ In tracing the changes of a nation’s life and character, we habitually give too exclusive a consideration to political influences, and ignore too much what may be termed physiological ones, which yet are always powerful and often preponderant. A glance at the two most ‘exercised’ nations in the world will illustrate our meaning. To begin with America.

“ Eleven years ago a remarkable article in the *National Review*, entitled ‘Three Men and Three Eras,’ pointed out in a succinct historical sketch the rapid degeneracy (according to our way of thinking) which had come over America since the days of Washington in manners, public morals, and political institutions. The writer pointed out that the great new republic, which in 1790 numbered thirteen States and 4,000,000 of people, and 820,000 square miles, had swelled in 1830, when Andrew Jackson became president, to twenty-four States, with a population of 13,000,000, and an area of 1,786,000 square miles, and in 1860, under Mr. Buchanan, to thirty-three States, with a population of 31,600,000, and an area of 2,963,000 square miles. He also showed that in the course of that seventy years nearly every political safeguard to which the founders of the republic trusted for its purity and greatness had been swept away; that the high standard of public virtue, the independence of the judges, the permanence of the civil service, the limits of the electoral franchise had all been tampered with or destroyed; and that the results were such as might have been anticipated. But, curiously enough, he left entirely unnoticed an influence the steady and overpowering operation of which might have accounted for many of the changes which he signalled, namely, the rapid and extensive alteration in the race, the personnel of the nation, which all this time was going on. The Americans of the days of General Grant can scarcely be said to be the descendants of the Americans of Washington’s epoch. The original republicans who founded that great empire have not so much multiplied as they have been superseded. We are now in a position to measure and estimate the magnitude of the transmutation.

“ The colonists who defied Great Britain in 1776, and established their independence in 1783, were the lineal and unspoiled descendants of the two best classes which England ever sent forth. They sprang, not only without degeneracy, but with the invigoration of a transplanted life, from the élite of Englishmen—the Puritans and Pilgrim Fathers who settled in New England, and the gallant and adventurous cavaliers who colonised Virginia, Carolina, and Baltimore. Who, according to the last census just published, constitute the actual citizens of the United States in 1870? How many of them are the children or grandchildren, or

in any way really the pure genuine descendants, of the chivalrous, religious, and highminded Anglo-Saxons, or rather Britons, who won their independence under Washington? We cannot say with accuracy, but almost certainly not *one-half*.

“The facts are these, and they are very instructive. Taking round numbers, the entire population of the Union is 38,500,000, of which the coloured race (negro, or with more or less of negro blood, including the few Indians and Chinese) constitutes as nearly as may be 5,000,000. This element we will, for obvious reasons, leave out of consideration for the present. But what are the constituent elements of the white residue who reach 33,500,000? Just one-half of them are foreigners, or born in America of foreign parents. The figures are these, as nearly as can be ascertained:—

Foreign born.....	5,500,000
Both parents foreign	9,740,000
One parent ,, 	1,160,000
	<hr/>
	16,400,000

That is, we may say 16½ millions out of 33½ millions are of foreign birth or foreign parentage.

“Next, we have to consider of *what* foreign origin. And if we assume, as we probably may, that the foreigners who marry Americans bear the same proportion to countries as the foreign immigrants, the result is as follows:—

	Foreign Born.	Of Foreign Parents.	Total.
Ireland	1,900,000	3,800,000	5,700,000
Germany.....	1,700,000	3,400,000	5,100,000
Great Britain and Canada....	1,200,000	2,400,000	3,600,000
Rest of Europe	500,000	1,000,000	1,500,000
Miscellaneous.....	200,000	400,000	600,000
	<hr/>	<hr/>	<hr/>
	5,500,000	11,000,000	16,500,000

It is evident, however, that this table does not quite completely or correctly represent the extent or apportionment of the foreign element in the population. It does not take into account the grandchildren of foreign-born parents, who must be very numerous, nor the numbers of French and Spanish extraction who were incorporated by the purchase of Louisiana and the cession of Florida, nor the number of Irish (very large certainly) included among the emigrants from Canada. When we have made the requisite allowances under these heads, the proportions of blood and original nationality—the several foreign elements which now go to make up the aggregate of the citizens of the United States—will stand approximately thus:—

	Per Cent.
Original British stock.....	46
Of Irish extraction	16
„ German ,, 	13
„ African ,, 	12
„ recent British extraction	8
„ French, Spanish, and others	5
	<hr/>
	100

But, as of late years, the new arrivals, especially the Irish and Germans, have proved far more prolific than the older population of the New England States, it may fairly be doubted whether more than half the present inhabitants of the United States are of real English blood. Such a change as this since the days of Washington could not possibly have taken place without entailing a change of character of almost equal magnitude, even if other circumstances had not exercised great influence also."

II.—*Pawnbrokers.*

FROM the *Pall Mall Gazette*:—

“ An account of the transactions of the pawnbrokers, of the number and value of the pledges given, redeemed, or forfeited during a series of years would throw a curious light upon the economic and social condition of the people of the period. Anything like a full chronicle of the kind it is hopeless to expect; but the Inland Revenue has gone some short way in the matter, by laying before Parliament this Session a statement of the number of licences issued to pawnbrokers in Great Britain in the twenty-five years 1848 to 1872. The object of the return was to ascertain not only the number of licences annually issued, but also the number of persons to whom they were granted. The department could not state the number of persons, the official books being limited, it is stated, to a record of licences only. Probably we shall not be far out in taking each licence to represent a pawnbroker—it certainly represents one establishment; for the purpose of comparing the numbers in one year with those in another this mode of reckoning will be quite fair. It would be needless and wearisome to collate the figures for every year, merely observing that with little check each year advanced in number upon its predecessor. A comparison of the three census years will suffice; it discloses some remarkable results:—

Year.	Population.	Number of Licences Issued.			Ratio of Licences to 100,000 of Population.
		In England.	In Scotland.	Total.	
1851	20,959,000	1,727	146	1,873	8·9
'61	23,128,000	2,313	265	2,578	11·1
'71	26,063,000	3,108	342	3,450	13·2

“ If the proportion of pawnbrokers to population had remained the same in 1861 and 1871 as it was in 1851, we should rightly infer, in the absence of more precise exponents, that the demands of the people for the accommodation of pawnshops had been stationary. But the reverse is strikingly shown by our table. Pawnbrokers, though a very limited class, have increased more rapidly than the people generally. In twenty years the population has increased by 24 per cent.; the pawnbrokers by 84 per cent. In 1851 something under nine pawnbrokers met the wants of every 100,000 persons of the population; in 1871 the same number of people required the accommodation of something over thirteen pawnbrokers. We need not dwell upon the great development of the wealth and the large increase in

the wages of the labouring classes which have taken place during the period under discussion. The moral of the figures is that the business of the pawnbroker, contrary to the popular notion, flourishes more in good than in bad seasons. A pawnbroker's licence costs 15*l.* in London, and half that sum in all other parts of Great Britain. In London alone the licences issued were 348 in 1851, 389 in 1861, and 523 in 1871, showing an increase between 1871 and 1851 of 50 per cent., or a less rate than that of all England and Scotland. The total number of licences in 1872 was 3,537, or 87 more than in 1871."

III.—*Military Expenditure on the Colonies.*

FROM the *Times* of 26th February:—

"The sums included in the army estimates for military purposes in the colonies of the United Kingdom amounted to 2,589,886*l.* in the estimates for the financial year 1869-70, 1,905,538*l.* in 1870-71, 1,855,706*l.* in 1871-72, 1,761,257*l.* for 1872-73. This last sum includes an expenditure of 658,078*l.* at Malta and Gibraltar. The probable colonial repayments in aid of military expenditure were stated at 309,600*l.* in 1870-71, and 290,000*l.* in 1871-72, and they are now stated at 279,300*l.* in 1872-73. This last sum includes 160,000*l.* from Ceylon, as against an expenditure of 142,902*l.*; 52,600*l.* from the Straits Settlements, towards 62,713*l.* expenditure; 27,000*l.* from Mauritius, towards 55,300*l.*; 20,000*l.* from Hong Kong, towards 104,832*l.* expenditure from China; 10,000*l.* from the Cape and 3,500*l.* from Natal, towards 137,438*l.*; and 6,200*l.* from Malta. The vote in respect of Nova Scotia is for an expenditure of 132,060*l.*; Bermuda, 196,273*l.*; St. Helena, 22,875*l.*; Sierra Leone, 18,774*l.*; Gold Coast and Lagos, 17,302*l.*; Bahamas, 12,622*l.*; Honduras, 13,364*l.*; Jamaica, 67,871*l.*; Windward and Leeward Islands, 98,972*l.* These statements of imperial expenditure do not include the cost of arms, accoutrements, and stores supplied from this country, nor any proportion of recruiting expenses, head quarter, administrative expenses, and non-effective charges. The estimated regimental force of all ranks to be in the colonial commands in the years 1872-73 is 25,008, viz., 1,964 in Nova Scotia, 2,163 Bermuda, 2,437 Cape and Natal, 203 St. Helena, 669 Mauritius, 1,209 China, 2,080 Ceylon, 1,024 Straits Settlements, 4,484 Gibraltar, 5,729 Malta, 198 Sierra Leone, 200 Gold Coast and Lagos, 196 Bahamas, 196 Honduras, 1,006 Jamaica. The above settlements do not include India."

IV.—*Cotton Blooming.*

THE following is taken from a communication made to the *Manchester Guardian* by one of the correspondents of that journal:—

"The following table, compiled from reliable sources, exhibits the date of first bloom, the date of killing frost, and the extent of the crop for each year, since 1836. The returns for the years 1861 to 1864 are imperfect, and are, therefore, omitted:—

	Date of First Bloom.	Date of Killing Frost.	Crop, in Thousands of Bales.
1836.....	4th June	14th October	1,422
'37.....	7th May	27th „	1,801
'38.....	14th June	7th „	1,360
'39.....	24th May	7th November	2,177
'40.....	6th June	17th October	1,634
1841.....	10th June	15th October	1,683
'42.....	17th May	1st November	2,378
'43.....	12th June	15th October	2,030
'44.....	31st May	30th „	2,394
'45.....	30th „	3rd November	2,100
1846.....	10th June	1st November	1,778
'47.....	29th May	27th „	2,347
'48.....	30th „	20th „	2,728
'49.....	6th June	8th „	2,096
'50.....	24th „	26th October	2,355
1851.....	5th June	6th November	3,015
'52.....	3rd „	7th „	3,262
'53.....	10th „	25th October	2,930
'54.....	12th „	5th November	2,847
'55.....	30th May	25th October	3,527
1856.....	4th June	16th October	2,939
'57.....	24th „	20th November	3,113
'58.....	1st „	7th „	3,851
'59.....	31st May	7th „	4,669
'60.....	25th „	30th October	3,656
1865.....	23rd June	20th October	2,193
'66.....	11th „	25th „	2,019
'67.....	1st „	6th November	2,593
'68.....	13th „	24th „	2,439
'69.....	11th „	28th October	3,154
1870.....	9th June	18th November	4,352
'71.....	12th „	10th October	2,974

“ An examination of these dates shows that out of thirty-two years there were but three in which killing frost occurred before 15th October; fourteen in which it occurred between 15th October and 31st October; eleven between 31st October and 15th November; and five in which it came after 15th November. It is obvious also that whilst a late date of killing frost does not invariably concur with a large crop, it generally does so. This is especially the case when an early bloom and a late frost run together, thus giving a long growing season. In short it will be found that next to the quantity of land planted and the character of the season, the circumstance most closely affecting the extent of the crop is the length of the period intervening between the date of first bloom and the date of killing frost.”

REGISTRATION OF THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED JUNE, 1872.

BIRTHS AND DEATHS—QUARTER ENDED SEPTEMBER, 1872.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1872-66, and in the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—Numbers.

Years	'72.	'71.	'70.	'69.	'68.	'67.	'66.
Marriages No.	—	190,015	181,655	176,970	176,962	179,154	187,776
<i>Births</i> ,	—	797,143	792,787	773,381	786,858	768,349	753,870
Deaths ,	—	515,096	515,329	494,828	480,622	471,073	500,689

QUARTERS of each Calendar Year, 1872-66.

(I.) MARRIAGES:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	40,557	36,229	36,455	37,752	36,696	36,441	37,579
June ,	50,197	48,652	46,720	43,202	45,364	45,589	48,577
September ,	—	46,636	43,900	43,978	43,509	44,086	46,257
December ,	—	58,498	54,580	52,038	51,393	53,038	55,363

(II.) BIRTHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	208,737	209,787	206,366	203,775	198,584	194,763	196,753
June ,	208,711	200,877	203,615	188,618	202,839	199,660	192,437
September ,	201,105	192,986	192,521	190,394	192,583	190,782	179,086
December ,	—	193,493	190,285	190,594	192,852	183,144	185,594

(III.) DEATHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	134,992	138,603	143,773	133,096	119,676	134,008	138,136
June ,	120,914	120,870	121,128	118,947	110,010	112,355	128,551
September ,	118,786	121,236	124,297	114,644	130,482	108,513	116,650
December ,	—	134,387	126,131	128,141	120,454	116,197	117,352

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS
LIVING in the Years 1872-66, and the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—General Ratios.

YEARS.....	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
Estmtd. Popln. of England in thousands in middle of each Year....	23,075,	—	22,760,	22,457,	22,165,	21,882,	21,608,	21,343,
Persons Mar- ried	—	16·7	16·7	16·2	16·0	16·2	16·6	17·6
Births	—	35·3	35·0	35·3	34·9	36·0	35·6	35·3
Deaths.....	—	22·7	22·6	23·0	22·3	22·0	21·8	23·5

QUARTERS of each Calendar Year, 1872-66.

(I.) PERSONS MARRIED:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	14·1	13·8	12·9	13·2	13·8	13·5	13·7	14·3
June.....	17·5	16·9	17·1	16·7	15·6	16·6	16·9	18·3
September	—	16·3	16·3	15·5	15·7	15·8	16·2	17·2
December	—	19·8	20·4	19·2	18·6	18·6	19·5	20·6

(II.) BIRTHS:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	36·3	37·0	37·4	37·3	37·3	36·4	36·6	37·4
June.....	36·3	36·3	35·4	36·4	34·1	37·2	37·1	36·2
September	34·6	34·1	33·6	34·0	34·1	34·9	35·0	33·3
December	—	34·0	33·7	33·6	34·1	35·0	33·6	34·5

(III.) DEATHS:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March	23·5	25·2	24·7	26·0	24·4	21·9	25·2	26·2
June.....	21·0	21·8	21·3	21·6	21·5	20·2	20·9	24·2
September	20·4	21·1	21·1	22·0	20·5	23·7	19·9	21·7
December	—	22·4	23·4	22·3	22·9	21·8	21·3	21·8

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended September, 1872.

1	2	3	4	5	6	7	8	9	10
Quarters ending	Average Price of Consols (for Money).	Average Rate of Bank of England in Dis- count.	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.
				Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.		
							In-door.	Out-door.	
1870 Sept. 30	£ 91 $\frac{2}{8}$	3·9	<i>s. d.</i> 50 4	<i>d. d. d.</i> 4 $\frac{3}{4}$ —7 $\frac{1}{4}$ 6	<i>d. d. d.</i> 5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	<i>s. s. s.</i> 100—140 120	138,444	787,976	60·7
Dec. 31	92 $\frac{5}{8}$	2·5	50 1	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	50—90 70	150,729	802,291	41·6
1871 Mar. 31	92 $\frac{1}{8}$	2·7	53 7	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	75—100 87	160,984	878,892	40·2
June 30	93 $\frac{3}{8}$	2·5	59 9	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{2}$ 7	51—76 63	140,338	805,519	51·5
Sept. 30	93 $\frac{3}{8}$	2·2	57 9	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	5 $\frac{3}{4}$ —9 7 $\frac{1}{2}$	60—77 68	132,065	769,482	61·3
Dec. 31	93	4·2	56 3	5—7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{4}$ 6 $\frac{3}{4}$	75—104 89	140,955	758,474	41·8
1872 Mar. 31	92 $\frac{4}{8}$	3·0	55 4	5—7 $\frac{1}{4}$ 6 $\frac{1}{8}$	5 $\frac{3}{4}$ —8 $\frac{1}{2}$ 7 $\frac{1}{8}$	80—120 100	149,599	776,793	43·6
June 30	92 $\frac{7}{8}$	4·0	56 8	5 $\frac{1}{4}$ —7 $\frac{1}{2}$ 6 $\frac{3}{8}$	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	124—150 137	134,412	724,463	52·8
Sept. 30	92 $\frac{4}{8}$	3·5	58 11	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	6 $\frac{1}{4}$ —9 $\frac{1}{4}$ 7 $\frac{3}{4}$	105—133 119	126,377	681,987	61·1

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	1871. Quarters ending			1872. Quarters ending		
		March.	June.	Sept.	March.	June.	Sept.
England and Wales	22·4	24·7	21·3	21·1	23·5	21·0	20·4
I. London	24·3	27·2	23·1	22·9	24·0	20·7	21·4
II. South-Eastern counties	19·1	21·1	18·6	17·8	19·2	17·0	16·9
III. South Midland „	20·2	23·3	19·4	18·7	20·8	18·4	18·3
IV. Eastern counties	20·1	21·3	19·1	20·1	21·1	17·8	17·5
V. South-Western counties	19·9	23·1	18·7	17·0	21·4	19·1	16·1
VI. West Midland „	21·8	24·1	19·8	19·3	22·9	21·1	19·6
VII. North Midland „	20·8	23·1	19·0	19·5	21·9	21·3	21·4
VIII. North-Western „	26·3	29·5	24·6	25·0	26·6	23·8	24·0
IX. Yorkshire	24·0	24·2	22·0	22·8	25·5	23·7	23·9
X. Northern counties	22·7	24·1	24·9	27·6	27·3	23·3	22·9
XI. Monmouthshire and Wales	21·6	23·6	21·1	17·9	23·9	21·9	18·0

Note.—The rates of mortality in this table have been calculated on populations based upon the recently enumerated numbers, and will not therefore correspond with those published in previous returns.

D.—*Special Average Death-Rate Table:—ANNUAL RATE of MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1872-70.*

	Area in Statute Acres.	Population Enumerated. 1871.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1872.	Mean '62-71.	1871.	1870.
In 131 Districts, and 58 Sub-districts, comprising the Chief Towns.....	3,287,151	12,900,297	March ..	25·4	27·4	26·8	27·7
			June	22·6	23·4	23·0	22·7
			Sept.	23·0	23·8	24·0	23·9
			Dec.	—	25·1	26·4	24·3
			Year	—	25·0	25·0	24·7
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly Small Towns and Country Parishes	34,037,732	9,803,811	Year	—	19·7	19·5	20·6
			March ..	20·9	22·6	21·9	24·0
			June	18·9	19·8	19·1	20·1
			Sept.	17·0	17·5	17·4	19·1
			Dec.	—	18·8	19·5	19·1

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 366·25 days in leap year.

E.—*Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the Third Quarter of 1872, in TWENTY-ONE Large Towns.*

Cities, &c.	Estimated Population in the Middle of the Year 1872.	Births in 13 Weeks ending 28th Sept., 1872.	Deaths in 13 Weeks ending 28th Sept., 1872.	Annual Rate to 1,000 Living during the 13 Weeks ending 28th Sept.		Mean Temperature in 13 Weeks ending 28th Sept., 1872.	Rainfall in Inches in 13 Weeks ending 28th Sept., 1872.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,393,052	65,795	44,389	35·7	24·1	58·8	11·66
London	3,311,298	28,399	17,660	34·4	21·4	61·3	6·39
Portsmouth.....	115,455	980	772	34·1	26·8	59·7	7·25
Norwich	81,105	558	475	27·6	23·5	59·2	7·95
Bristol	186,428	1,642	979	35·4	21·1	—	—
Wolverhampton.....	69,268	603	370	34·9	21·4	58·8	12·19
Birmingham	350,164	3,308	2,159	37·9	24·7	59·3	10·02
Leicester.....	99,143	959	789	38·8	31·9	—	—
Nottingham	88,225	687	572	31·3	26·0	60·0	10·95
Liverpool.....	499,897	4,728	3,596	38·0	28·9	58·9	15·77
Manchester.....	352,759	3,397	2,443	38·7	27·8	—	—
Salford.....	127,923	1,336	824	41·9	25·9	58·4	16·51
Oldham	84,004	818	734	39·1	35·1	—	—
Bradford	151,720	1,440	988	38·1	26·1	59·8	10·52
Leeds	266,564	2,655	2,033	40·0	30·6	59·2	11·77
Sheffield	247,847	2,425	1,637	39·3	26·5	59·2	12·81
Hull.....	124,976	1,212	952	38·9	30·6	57·6	10·74
Sunderland	100,665	1,099	606	43·8	24·2	—	—
Newcastle-on-Tyne	130,764	1,339	883	41·1	27·1	—	—
Edinburgh	205,146	1,480	1,018	29·0	19·9	55·9	14·53
Glasgow	489,136	4,738	3,115	38·9	25·6	56·3	20·12
Dublin.....	310,565	1,992	1,784	25·7	23·1	58·5	7·47

F.—*Divisional Table*.—MARRIAGES Registered in Quarters ended 30th June, 1872-70; and BIRTHS and DEATHS in Quarters ended 30th September, 1872-70.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 5 6 MARRIAGES in Quarters ended 30th June.		
			1872.	1871.	1870.
			No.	No.	No.
ENGLD. & WALES....Totals	37,324,883	22,704,108	50,197	48,652	46,491
I. London	77,997	3,251,804	8,312	8,042	8,116
II. South-Eastern	4,065,935	2,166,217	3,854	3,848	3,708
III. South Midland	3,201,290	1,442,567	2,367	2,268	2,132
IV. Eastern	3,214,099	1,218,257	1,885	1,826	1,705
V. South-Western	4,993,660	1,879,898	3,484	3,532	3,508
VI. West Midland	3,862,732	2,720,003	6,057	6,047	5,514
VII. North Midland	3,543,397	1,406,823	3,450	3,285	3,136
VIII. North-Western	2,000,227	3,388,370	8,734	8,102	7,596
IX. Yorkshire	3,654,636	2,395,299	5,545	5,468	5,064
X. Northern	3,492,322	1,414,066	3,615	3,400	3,206
XI. Monmthsh. & Wales	5,218,588	1,420,804	2,894	2,834	2,806

7 DIVISIONS. (England and Wales.)	8 9 10 BIRTHS in Quarters ended 30th September.			11 12 13 DEATHS in Quarters ended 30th September.		
	1872.	1871.	1870.	1872.	1871.	1870.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES....Totals	201,105	192,986	192,178	118,786	121,236	124,258
I. London	28,399	26,628	26,953	17,660	18,637	18,816
II. South-Eastern	17,611	17,027	16,975	9,437	9,773	10,463
III. South Midland	12,154	11,578	11,525	6,752	6,812	7,842
IV. Eastern	9,768	9,375	9,372	5,410	6,166	5,779
V. South-Western	13,978	13,989	14,150	7,677	8,058	8,790
VI. West Midland	24,498	23,676	23,704	13,606	13,283	14,266
VII. North Midland	12,302	11,779	11,859	7,677	6,914	7,350
VIII. North-Western	32,638	31,248	30,754	20,917	21,427	21,651
IX. Yorkshire	22,995	21,777	21,621	14,764	13,830	15,049
X. Northern	14,497	13,841	13,145	8,370	9,892	7,660
XI. Monmthsh. & Wales	12,265	12,068	12,120	6,516	6,444	6,592

G.—General Meteorological Table, Quarter ended September, 1872.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, Esq., F.R.S., &c.]

1872. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames				
	Mean.	Diff. from Aver- age of 101 Years.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.		Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.
July ...	65·0	+3·4	+3·0	60·9	+3·4	57·5	+3·7	23·4	+2·4	67·4	In. ·473	In. +·058	Gr. 5·3	Gr. +0·7
Aug. ...	61·0	+0·2	−0·4	56·5	−0·8	53·6	−0·1	20·4	+0·6	65·5	·412	−·004	4·5	−0·1
Sept. ...	57·4	+0·9	+0·1	54·0	−0·1	50·8	−0·3	19·1	+0·6	62·0	·371	−·009	4·2	0·0
Mean ...	61·1	+1·5	+0·9	57·1	+0·8	54·0	+1·1	21·0	+1·2	65·0	·319	+·015	4·7	+0·2

1872. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Amnt.	Diff. from Aver- age of 57 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
										At or below 30°.	Be- tween 30° and 40°.	Above 40°.		
July ...	78	+ 3	In. 29·759	In. −·044	Gr. 524	Gr. − 4	In. 2·4	In. −0·1	Miles. 185	0	3	28	38·1	60·1
Aug. ...	75	− 1	29·800	+·008	529	0	2·7	+0·3	224	0	3	28	35·9	54·2
Sept. ...	79	− 1	29·681	−·030	531	− 2	1·4	−1·0	319	4	9	17	26·0	57·9
Mean ...	77	0	29·747	−·055	528	− 2	Sum 6·5	Sum −0·8	Mean 243	Sum 4	Sum 15	Sum 73	Lowest 26·0	Highest 60·1

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of July was 65°·0, being 3°·4 higher than the average of the preceding 101 years, higher than the corresponding value in 1871 by 3°·3, but lower than in 1870 by 0°·4.

The mean temperature of August was 61°·0, being 0°·2 higher than the average of 101 years, 3°·8 lower than in 1871, and of nearly the same value as that recorded in 1870.

The mean temperature of September was 57°·4, being 0°·9 higher than the average of 101 years, the same as the corresponding temperature of last year, but 1°·7 higher than in 1870.

The mean high day temperatures were respectively 4°·1 and 0°·5 higher than their averages in July and September, but of the same value in August.

The mean low night temperatures were 0°·6 and 0°·1 lower than their respective averages in August and September, but 1°·7 higher in July.

Therefore the days and nights of July were warm, and those of August and September of tolerably equable temperature.

H.—*Special Meteorological Table, Quarter ended 30th September, 1872.*

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey.....	29·533	78·5	41·5	37·0	26·5	9·1	60·1	81
Osborne	29·504	87·1	34·0	53·1	31·4	18·9	61·1	83
Barnstaple	29·501	89·0	35·5	53·5	39·3	14·8	61·2	79
Royal Observatory	29·508	90·9	34·5	56·4	42·5	21·0	61·1	77
Royston	29·521	91·5	35·9	55·6	45·7	21·4	60·2	78
Norwich	29·462	86·5	32·0	54·5	39·1	17·4	59·7	79
Derby	29·462	86·0	37·0	49·0	37·0	14·9	59·4	81
Stonyhurst	29·441	83·8	35·1	48·7	37·5	15·5	57·6	81
York	—	83·0	37·0	46·0	35·3	14·1	58·1	—
North Shields.....	29·548	81·0	35·8	45·2	31·8	10·7	55·8	80

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount Collected.
		N.	E.	S.	W.			
								in.
Guernsey.....	1·1	5	5	8	12	3·6	41	8·86
Osborne	0·7	4	5	11	11	5·4	40	6·67
Barnstaple	1·3	2	3	13	12	3·6	55	14·31
Royal Observatory	0·3	5	5	8	13	6·2	37	6·45
Royston	—	—	—	—	—	5·7	36	5·59
Norwich	—	6	5	9	11	—	42	7·99
Derby	—	6	5	9	11	—	49	10·95
Stonyhurst	—	5	5	5	15	7·0	71	18·91
York	—	—	—	—	—	—	51	11·05
North Shields.....	1·7	10	5	6	10	5·8	59	10·89

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER

ENDED 30TH SEPTEMBER, 1872.

I.—Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year, during each Quarter of the Years 1872-68 inclusive.

	1872.		1871.		1870.		1869.		1868.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
<i>1st Quarter—</i>										
Births	29,506	3·47	28,902	3·43	28,674	3·44	28,429	3·44	28,697	3·50
Deaths	21,245	2·50	19,756	2·34	22,184	2·66	20,431	2·47	18,042	2·20
Marriages ..	5,820	0·68	5,415	0·64	5,631	0·67	5,291	0·64	5,287	0·64
Mean Tem- perature }	40°·7		39°·1		36°·9		40°·0		40°·6	
<i>2nd Quarter—</i>										
Births	30,726	3·61	30,583	3·63	30,645	3·67	29,472	3·56	30,983	3·78
Deaths	19,045	2·24	18,715	2·22	17,984	2·15	19,449	2·35	16,958	2·07
Marriages ..	5,398	0·75	5,946	0·70	5,754	0·69	5,596	0·67	5,661	0·69
Mean Tem- perature }	49°·2		48°·7		51°·0		48°·4		51°·0	
<i>3rd Quarter—</i>										
Births	—	—	28,689	3·40	28,272	3·39	27,646	3·33	28,354	3·46
Deaths	—	—	16,835	2·00	16,555	2·03	16,532	2·00	16,659	2·03
Marriages ..	—	—	5,424	0·64	5,301	0·63	4,870	0·59	4,704	0·57
Mean Tem- perature }	—		56°·3		57°·1		56°·4		57°·4	
<i>4th Quarter—</i>										
Births	—	—	27,953	3·32	27,832	3·26	27,846	3·37	27,480	3·35
Deaths	—	—	19,338	2·29	17,344	2·08	19,377	2·34	17,757	2·17
Marriages ..	—	—	7,181	0·85	7,102	0·85	6,326	0·76	6,203	0·77
Mean Tem- perature }	—		41°·3		39°·6		40°·9		41°·5	
<i>Year—</i>										
Population.	3,397,625		3,366,375		3,335,418		3,304,747		3,274,360	
Births	—	—	116,127	3·45	115,423	3·46	113,395	3·41	115,514	3·53
Deaths	—	—	74,644	2·22	74,067	2·22	75,789	2·29	69,416	2·12
Marriages ..	—	—	23,966	0·71	23,788	0·71	22,083	0·66	21,855	0·66

II.—*Special Average Table.*III.—*Bastardy Table.*IV.—*Divisional Table.*

* * The Registrar-General for Scotland has been unable to supply the particulars for these tables, in consequence of the printers' strike in that country.—ED. S. J.

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 30th June, 1872; and
BIRTHS and DEATHS, in the Quarter ended 30th September, 1872.

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Popu- lation, 1871. (Persons.)						
England and Wales }	37,325,	No. 22,704,	No. 50,197	Ratio. 2·2	No. 201,105	Ratio. 8·8	No. 118,786	Ratio. 5·2
Scotland	19,639,	3,359,	6,398	1·9	29,181	8·7	16,692	4·9
Ireland	20,323,	5,403,	5,554	1·0	33,952	6·3	19,676	3·7
GREAT BRITAIN AND IRELAND }	77,287,	31,466,	62,149	1·9	264,238	8·4	155,154	4·9

Note.—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have *succeeded* in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births and deaths are much under those of England and Scotland.—ED. S. J.

Trade of United Kingdom, 1872-71-70.—Distribution of Exports* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Six Months.					
	1872.		1871.		1870.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	13,327,	4,257,	10,737,	4,126,	9,013,	4,059,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	21,628,	26,270,	23,077,	21,889,	17,551,	18,881,
Eastern Europe; viz., France, Portugal with Azores, Madeira, &c.), and Spain with Gibraltar and Canaries)	26,742,	11,989,	18,937,	11,894,	21,517,	9,385,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	3,120,	4,511,	3,768,	4,489,	2,614,	4,200,
Constantinople; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	11,655,	6,715,	10,559,	6,163,	11,196,	8,311,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco	526,	175,	326,	133,	206,	165,
Western Africa	868,	470,	930,	525,	629,	489,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	103,	126,	134,	74,	42,	136,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,109,	662,	1,068,	745,	1,093,	739,
South Sea Islands	80,	10,	34,	10,	34,	18,
China, including Hong Kong	5,538,	5,717,	5,696,	6,158,	5,098,	5,300,
United States of America	32,102,	21,903,	36,692,	17,227,	28,945,	13,190,
Mexico and Central America	950,	538,	535,	617,	647,	391,
Foreign West Indies and Hayti	2,024,	1,577,	1,766,	1,734,	2,818,	1,898,
South America (Northern), New Granada, Venezuela, and Ecuador	684,	1,723,	702,	1,333,	468,	1,070,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	5,354,	2,537,	4,362,	1,957,	3,662,	2,151,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres	7,445,	5,948,	5,044,	4,386,	4,356,	3,970,
Whale Fisheries; Grnld., Davis' Straits, Southn. Whale Fishery, & Falkland Islands	32,	6,	49,	—	90,	—
Total—Foreign Countries	133,287,	95,134,	124,416,	83,460,	109,979,	74,353,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	23,080,	10,396,	15,120,	9,407,	12,196,	11,377,
Austral. Cols.—N. So. W., Viet., and Queensld.	7,546,	4,387,	6,266,	3,367,	7,291,	3,668,
„ „ So. Aus., W. Aus., Tasm., and N. Zealand	3,977,	1,613,	3,146,	1,071,	2,719,	1,360,
British North America	898,	4,106,	1,637,	3,059,	1,078,	2,696,
„ W. Indies with Btsh. Guiana & Honduras	3,266,	1,623,	3,448,	1,463,	2,851,	1,830,
„ Cape and Natal	1,824,	1,815,	1,476,	871,	1,367,	860,
„ W. Co. of Af., Ascension and St. Helena	251,	439,	445,	304,	187,	354,
„ Mauritius	1,020,	322,	391,	274,	712,	260,
„ Channel Islands	366,	360,	320,	434,	258,	351,
Total—British Possessions	42,228,	25,061,	32,249,	20,240,	28,659,	22,756,
General Total	£ 175,515,	120,095,	156,665,	103,700,	138,638,	97,109,

* i.e., British and Irish produce and manufactures.

IMPORTS.—(United Kingdom.)—First Eight Months (*January—August*), 1872-71-70-69-68.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Eight Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
RAW MATLS.— <i>Textile, &c.</i>	Cotton Wool	40,475,	39,064,	36,828,	34,304,	37,306,
	Wool (Sheep's) ..	16,096,	15,303,	12,620,	11,281,	10,410,
	Silk*.....	9,571,	9,995,	13,156,	10,415,	10,977,
	Flax	3,418,	3,275,	3,825,	2,650,	3,079,
	Hemp	4,694,	4,311,	2,815,	2,634,	2,106,
	Indigo	2,367,	2,450,	2,152,	2,420,	2,378,
		76,621,	74,398,	71,396,	63,704,	66,256,
" " <i>Various.</i>	Hides	4,409,	3,077,	2,521,	1,793,	1,748,
	Oils	3,030,	3,377,	2,428,	2,481,	2,325,
	Metals	7,829,	6,218,	3,109,	3,170,	2,905,
	Tallow	1,992,	1,721,	1,752,	1,339,	834,
	Timber.....	8,022,	6,594,	5,184,	4,755,	4,274,
		25,282,	20,987,	14,994,	13,538,	12,086,
" " <i>Agricul.</i>	Guano	737,	1,692,	2,182,	960,	1,486,
	Seeds	4,330,	4,878,	1,572,	1,702,	2,213,
		5,067,	6,570,	3,754,	2,662,	3,699,
TROPICAL, &c., PRODUCE.	Tea	8,433,	7,628,	5,860,	5,300,	5,460,
	Coffee	4,029,	4,114,	2,737,	3,151,	3,244,
	Sugar & Molasses	14,594,	13,679,	12,820,	10,640,	9,950,
	Tobacco	1,764,	2,657,	834,	646,	973,
	Rice	1,532,	1,551,	883,	1,638,	1,469,
	Fruits	1,232,	1,008,	619,	768,	784,
	Wines	5,271,	4,820,	3,351,	3,706,	3,756,
	Spirits	1,560,	2,139,	1,813,	1,384,	1,377,
		38,415,	37,596,	28,917,	27,233,	27,010,
FOOD	Grain and Meal.	28,572,	25,212,	21,796,	20,828,	27,193,
	Provisions	13,181,	11,793,	9,434,	9,372,	7,646,
		41,753,	37,005,	31,230,	30,200,	34,839,
Remainder of Enumerated Articles		24,890,	22,661,	10,175,	11,246,	8,672,
TOTAL ENUMERATED IMPORTS		212,028,	199,216,	160,466,	148,583,	152,562,
Add for UNENUMERATED IMPORTS (say)		22,000,	16,293,	40,116,	37,145,	38,140,
TOTAL IMPORTS		235,028,	215,510,	200,582,	185,728,	180,702,

* "Silk," inclusive of manufactured silk, "not made up."

EXPORTS.—(United Kingdom.)—**First Nine Months** (*January—September*),
1872-71-70-69-68.—*Declared Real Value, at Port of Shipment, of Articles*
of BRITISH and IRISH Produce and Manufactures Exported from United
Kingdom.

(First Nine Months.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
MANFRS.— <i>Textile.</i>	Cotton Manufactures..	47,467,	43,118,	42,406,	39,459,	39,006,
	„ Yarn	12,078,	11,096,	10,823,	10,484,	10,989,
	Woollen Manufactures	25,815,	20,694,	16,343,	17,671,	14,834,
	„ Yarn	4,543,	4,457,	3,754,	4,465,	4,927,
	Silk Manufactures.....	1,743,	1,598,	1,762,	1,567,	1,653,
	„ Yarn	1,343,	975,	134,	166,	159,
	Linen Manufactures	6,367,	5,622,	5,528,	5,182,	5,307,
	„ Yarn	1,520,	1,699,	1,755,	1,721,	1,735,
		100,876,	89,259,	82,505,	80,715,	78,610,
„ <i>Sewed.</i>	Apparel	2,170,	1,972,	1,472,	1,700,	1,583,
	Haberd. and Millnry.	5,097,	4,524,	3,605,	3,537,	3,423,
		7,267,	6,496,	5,077,	5,237,	5,006,
METALS, &c.	Hardware	3,684,	2,803,	3,339,	3,239,	2,784,
	Machinery	5,597,	4,210,	4,094,	3,745,	3,450,
	Iron	26,591,	19,338,	16,370,	14,713,	11,149,
	Copper and Brass.....	2,655,	2,379,	2,345,	2,515,	2,326,
	Lead and Tin	1,406,	1,228,	3,519,	3,473,	2,987,
	Coals and Culm	7,209,	4,490,	4,132,	3,786,	4,096,
		47,142,	34,448,	33,799,	31,471,	26,792,
Ceramic Manufcts. Earthenware and Glass		2,258,	1,887,	1,888,	1,993,	1,826,
Indigenous Mnfrs. and Products.	Beer and Ale.....	1,530,	1,386,	1,451,	1,417,	1,387,
	Butter	219,	236,	212,	196,	194,
	Cheese	56,	68,	78,	74,	77,
	Candles	171,	130,	82,	128,	162,
	Salt	392,	359,	294,	332,	383,
	Spirits	164,	148,	138,	172,	128,
	Soda	1,814,	1,268,	1,083,	1,033,	1,147,
		4,346,	3,595,	3,338,	3,352,	3,478,
Various Manufcts.	Books, Printed	629,	506,	448,	484,	496,
	Furniture	—	—	163,	176,	140,
	Leather Manufactures	2,668,	2,769,	1,806,	1,926,	1,759,
	Soap	228,	167,	164,	163,	192,
	Plate and Watches	143,	131,	359,	372,	277,
	Stationery	467,	376,	358,	352,	304,
		4,135,	3,949,	3,293,	3,473,	3,168,
Remainder of Enumerated Articles		12,667,	13,830,	10,592,	9,138,	8,121,
Unenumerated Articles.....		11,624,	10,126,	8,142,	7,328,	6,703,
TOTAL EXPORTS.....		190,315,	163,590,	148,634,	142,707,	133,704,

SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the **Nine Months ended September, 1872**, as compared with Corresponding Months of Years 1871 and 1870.

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1872.		1871.		1870.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
FOREIGN COUNTRIES.						
Russia { Northern ports	699,592	573,835	760,015	703,097	585,139	737,317
{ Southern „	449,506	160,125	411,726	166,836	323,973	175,722
Sweden	706,972	411,705	707,475	326,604	558,941	311,059
Norway	622,014	210,919	613,529	215,805	550,610	212,383
Denmark	135,767	403,723	102,209	387,640	126,242	424,454
Germany	1,144,329	1,845,166	1,141,022	1,853,580	793,818	1,127,670
Holland	614,430	814,948	549,891	768,200	529,879	657,740
Belgium	587,823	575,470	512,229	563,393	428,729	455,537
France	1,187,455	1,787,360	919,723	1,827,316	1,023,810	1,961,976
Spain	641,095	415,128	478,738	394,907	394,578	413,298
Portugal	207,040	185,314	191,958	165,608	206,237	180,289
Italy	192,447	572,726	162,779	499,140	133,749	376,387
Austrian territories	29,648	130,177	55,122	131,371	65,298	136,534
Greece	80,313	48,384	47,061	46,964	*	*
Turkey (including Walla- chia and Moldavia) }	190,026	282,797	243,866	273,834	328,155	224,719
Egypt	337,754	358,790	265,377	390,986	249,893	355,776
United States of America ...	1,877,478	1,790,693	1,953,853	1,893,684	1,417,398	1,433,954
Mexico, Foreign West Indies, and Central America	246,310	290,877	152,253	267,543	291,314	255,475
Brazil	200,449	295,924	149,657	281,587	154,174	232,916
Peru	111,769	200,673	145,784	122,676	} 239,211	175,464
Chili	74,423	168,553	46,097	101,363		
China	78,223	51,895	75,709	46,811	*	*
Other countries	393,541	455,078	314,450	394,719	393,676	582,375
<i>Total, Foreign Countries</i>	10,808,404	12,030,260	10,000,523	11,823,664	8,795,324	10,431,045
BRITISH POSSESSIONS.						
North American Colonies ...	782,755	688,907	683,339	709,987	776,125	659,169
East Indies, including Ceylon, Singapore, and Mauritius	754,307	793,992	624,755	841,515	535,928	723,280
Australia and New Zealand	192,204	271,123	192,804	216,797	157,727	217,169
West Indies	188,790	119,854	208,192	135,834	187,316	109,750
Channel Islands	187,055	140,623	174,994	128,755	†	†
Other possessions	139,731	572,837	136,176	461,465	349,418	576,588
<i>Total, British Possessions</i>	2,244,842	2,587,336	2,020,260	2,494,353	2,006,514	2,285,956
TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.						
Nine months { 1872	13,053,246	14,617,596	—	—	—	—
{ '71	—	—	12,020,783	14,318,017	—	—
{ '70	—	—	—	—	10,801,838	12,717,001

* Included in "Other countries."

† Included in "Other possessions."

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—Computed Real Value for the Nine Months (January—September), 1872-71-70.

[000's omitted.]

(First Nine Months.)	1872.		1871.		1870.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	4,520,	15,	5,114,	14,	4,797,	6,
So. Amca. and W. } Indies	585,	1,881,	943,	2,531,	1,245,	2,754,
United States and } Cal.	7,189,	3,520,	6,407,	4,471,	6,413,	1,668,
	12,294,	5,416,	12,464,	7,016,	12,455,	4,428,
France.....	549,	546,	141,	66,	253,	1,175,
Germany, Holl. & } Belg.	416,	2,363,	1,368,	365,	297,	14,
Prtgl., Spain, and } Gbrltr.....	57,	44,	47,	41,	37,	76,
Mlta., Trky., and } Egypt	84,	50,	188,	90,	990,	18,
China	—	62,	2,	2,313,	37,	43,
West Coast of Africa	81,	—	106,	4,	78,	3,
All other Countries...	193,	81,	1,175,	1,483,	1,042,	1,129,
Totals Imported....	13,674,	8,562,	15,491,	11,378,	15,189,	6,886,
Exported to:—						
France.....	972,	722,	1,491,	891,	3,353,	473,
Germany, Holl. & } Belg.	5,377,	1,047,	5,770,	5,167,	1,508,	2,860,
Prtgl., Spain, and } Gbrltr.....	1,248,	550,	569,	976,	290,	284,
	7,597,	2,319,	7,830,	7,034,	5,151,	3,617,
Ind. and China (via } Egypt).....	825,	4,551,	865,	1,533,	368,	1,869,
Danish West Indies	—	—	—	—	—	—
United States	—	—	53,	1,	70,	22,
South Africa	1,036,	74,	493,	6,	118,	—
Mauritius	—	—	—	—	—	—
Brazil	295,	—	977,	—	77,	75,
All other Countries...	4,766,	921,	708,	395,	860,	349,
Totals Exported....	14,519,	7,865,	10,926,	8,969,	6,644,	5,932,
Excess of Imports	—	697,	4,565,	2,409,	8,545,	954,
„ Exports	845,	—	—	—	—	—

REVENUE.—(UNITED KINGDOM.)—30TH SEPTEMBER, 1872-71-70-69.

Net Produce in YEARS and QUARTERS ended 30th SEPT., 1872-71-70-69.

[000's omitted.]

QUARTERS, ended 30th Sept.	1872.	1871.	1872.		Corresponding Quarters.	
			Less.	More.	1870.	1869.
	£	£	£	£	£	£
Customs	5,051,	4,964,	—	87,	4,828,	5,333,
Excise	5,365,	4,607,	—	758,	4,559,	4,326,
Stamps	2,258,	2,417,	159,	—	2,120,	2,179,
Taxes	81,	107,	26,	—	93,	318,
Post Office	1,200,	1,112,	—	88,	1,110,	1,200,
Telegraph Service	250,	255,	5,	—	100,	—
	14,205,	13,462,	190,	933,	12,810,	13,356,
Property Tax	589,	608,	19,	—	448,	1,128,
	14,794,	14,070,	209,	933,	13,258,	14,484,
Crown Lands	70,	74,	4,	—	75,	74,
Miscellaneous	946,	870,	—	76,	869,	668,
<i>Totals</i>	15,810,	15,014,	213,	1,009,	14,202,	15,226,
			NET INCR. £795,617			

YEARS, ended 30th Sept.	1872.	1871.	1872.		Corresponding Years.	
			Less.	More.	1870.	1869.
	£	£	£	£	£	£
Customs	20,626,	20,025,	—	601,	20,542,	22,331,
Excise	24,719,	23,032,	—	1,687,	22,291,	20,718,
Stamps	9,761,	9,419,	—	342,	8,965,	9,427,
Taxes	2,369,	2,324,	—	45,	3,544,	3,466,
Post Office	4,838,	4,732,	—	106,	4,630,	4,670,
Telegraph Service	805,	685,	—	120,	340,	—
	63,118,	60,217,	—	2,901,	60,312,	60,612,
Property Tax	9,802,	6,487,	—	3,315,	7,765,	8,906,
	72,920,	66,704,	—	6,216,	68,077,	69,518,
Crown Lands	371,	384,	13,	—	377,	362,
Miscellaneous	3,771,	4,196,	425,	—	3,417,	3,382,
<i>Totals</i>	77,062,	71,284,	438,	6,216,	71,871,	73,262,
			NET INCR. £5,777,459			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH SEPT., 1872:—

An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 30th September, 1872; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 30th of September, 1872, in respect of such Charges.

Received:—

	£
Surplus balance in the Exchequer on the 30th of June, 1872, beyond the amount of the Charge on the Consolidated Fund, on that date, as per last account	1,953,399
Income received, as shown in Account I	15,809,817
Amount received in Repayment of Advances for Public Works, &c. ...	712,549
„ for Greenwich Hospital	60,680
Amount cancelled on account of the charge on the 30th of June, 1872 .	75
	<u>£18,536,520</u>
Excess of the Sums charged on the Consolidated Fund on the 30th of September, 1872, payable in December Quarter, 1872, above the Balance in the Exchequer at that date, viz.:—	
Excess of Charge in Great Britain.....	£1,246,849
Surplus overcharge in Ireland.....	1,114,764
	<u>Net deficiency</u>
	*132,085
Total	<u>£18,668,605</u>

Paid:—

	£
Amount applied out of the Income to <i>Supply Services</i>	10,286,863
„ advanced for Greenwich Hospital	60,680
Charge of the <i>Consolidated Fund</i> on the 30th of September, 1872, viz.:—	
Interest of the Permanent Debt	£4,863,885
Terminable Annuities	554,410
Principal of Exchequer Bills	9,200
Interest of „ „ „	24,650
The Civil List	101,524
Other Charges on Consolidated Fund	274,893
Advances for Public Works, &c.	1,246,322
Sinking Fund	1,246,178
	<u>8,321,062</u>
Total	<u>18,668,605</u>

* Charge on 30th of September, 1872 (as above)	£8,321,062
Paid out of growing produce in September Quarter, 1872	1,399,579
Portion of the Charge payable in December Quarter, 1872.....	6,921,483
To meet which there was in the Exchequer on the 30th of September, 1872.....	6,789,398
	<u>Net deficiency as above</u>
	132,085

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),
Third Quarter of 1872.**

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1872.		Weekly Average. (Per Impl. Quarter.)					
		Wheat.		Barley.		Oats.	
		s.	d.	s.	d.	s.	d.
July	6	58	4	32	3	24	5
"	13	58	4	33	3	23	9
"	20	58	6	32	1	24	5
"	27	59	1	32	1	24	9
<i>Average for July</i>		58	6	32	5	24	4
August	3	59	5	36	4	25	2
"	10	59	5	30	8	25	1
"	17	59	10	30	3	23	7
"	24	60	3	32	8	26	7
"	31	59	6	31	3	25	2
<i>Average for August</i>		59	8	32	2	25	1
Sept.	7	57	5	36	4	23	5
"	14	58	—	35	10	23	5
"	21	58	9	37	9	22	6
"	28	59	2	39	5	22	9
<i>Average for September</i>		58	4	37	4	23	—
<i>Average for the quarter</i>		58	11	33	10	24	2

RAILWAYS.—PRICES, July—September;—and TRAFFIC, January—September, 1872.

[Abstract from "Heraopath's Journal" and the "Times."]

Total Capital Ex- pended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. 39 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 39 Weeks.		Dividends per Cent. for Half Years.			
		2nd Sept.	1st Aug.	1st July.	'72.	'71.	'72.	'71.	'72.	'71.	June, '72.	Dec., '71.	June, '70.	
£					No.	No.	£	£	£	£	s.	d.	s.	d.
57,4	Lond. & N. Westn.	147	149	151	1,517	1,509	3,878,	5,532,	99	94	70	—	87	6
47,3	Great Western	118	141	116	1,388	1,386	3,658,	3,425,	67	64	55	—	53	9
20,2	„ Northern...	140	114	141	513	491	1,845,	1,713,	92	89	60	—	87	6
27,9	„ Eastern	49½	49	51	758	748	1,637,	1,560,	55	54	5	—	25	—
17,8	Brighton	76½	72	78	376	371	1,090,	1,017,	76	65	15	—	42	6
18,8	South-Eastern	104½	101	100	346	346	1,243,	1,173,	92	87	35	—	60	—
17,8	„ Western....	107	108	108	579	560	—	—	—	—	47	6	62	6
207,1		106	105	106½	5,477	5,411	—	—	—	—	—	—	59	9
41,7	Midland	145	145	150	871	860	3,455,	3,083,	102	92	70	—	75	—
24,6	Lancsh. and York.	156	157	158	428	428	2,302,	2,170,	134	130	76	3	80	—
14,0	Sheffield and Man.	80	75	78¼	254	254	1,030,	920,	112	94	25	—	40	—
44,9	North-Eastern	166	167	170	1,329	1,309	3,598,	3,628,	93	89	85	—	100	—
125,2		137	136	139¼	2,882	2,851	10,385,	9,801,	110	101	64	—	73	9
23,7	Caledonian	118	115	115	704	704	2,843,	1,722,	103	62	50	—	57	6
6,3	Gt. S. & Wn. Irln.	112	115	116	445	445	—	—	—	—	55	—	55	—
362,3	Gen. aver.	117	116	118	9,508	9,411	—	—	—	—	—	—	63	7

Consols.—Money Prices, 2nd Sept., 92½.—1st August, 92½.—1st July, 92½.

Exchequer Bills.—2nd Sept., par to 5s. pm.—1st Aug., par to 5s. pm.—1st July, par to 5s. pm.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the THIRD QUARTER (July—September) of 1872.

[0,000's omitted.]

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in	Minimum Rates
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	Hands of Public. (Col. 1 minus col. 16.)	of Discount at Bank of England
£	1872.	£	£	£	£	1872. Per cent.
Mlns.	July 3 ...	Mlns.	Mlns.	Mlns.	Mlns.	20 June 3
38,45	" 10 ...	11,01	3,98	23,45	26,45	18 July 3½
37,90	" 17 ...	11,01	3,98	22,91	26,26	
37,14	" 24 ...	11,01	3,98	22,14	26,16	
37,46	" 31 ...	11,01	3,98	22,46	26,16	
37,20		11,01	3,98	22,20	26,35	
37,64	Aug. 7 ...	11,01	3,98	22,64	26,58	
37,55	" 14 ...	11,01	3,98	22,55	26,28	
37,46	" 21 ...	11,01	3,98	22,46	25,99	
37,50	" 28 ...	11,01	3,98	22,50	25,76	
37,51	Sept. 4 ...	11,01	3,98	22,51	26,45	
37,08	" 11 ...	11,01	3,98	22,08	25,95	
36,44	" 18 ...	11,01	3,98	21,44	25,79	19 Sept. 4
35,30	" 25 ...	11,01	3,98	20,30	25,01	26 " 4½

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabili- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£	1872.	£	£	£	£	£
Mlns.	Mlns.	Mlns.	Mlns.	Mlns.	July 3	Mlns.	Mlns.	Mlns.	Mlns.	Mlns.
14,55	3,26	12,02	19,04	,38	July 3	13,39	23,26	12,00	,61	49,26
14,55	3,40	6,27	19,74	,43	„ 10	13,38	18,72	11,64	,64	44,38
14,55	3,43	5,74	21,49	,45	„ 17	13,38	20,78	10,98	,52	45,66
14,55	3,45	6,24	22,21	,42	„ 24	13,38	21,56	11,30	,67	46,92
14,55	3,45	6,71	26,13	,41	„ 31	13,38	26,39	10,85	,62	51,26
14,55	3,49	7,14	23,97	,43	Aug. 7	13,36	24,62	11,06	,55	49,58
14,55	3,49	7,13	21,21	,44	„ 14	13,36	21,64	11,27	,57	46,83
14,55	3,48	7,28	19,76	,47	„ 21	13,36	20,05	11,47	,66	45,53
14,55	3,48	7,77	19,21	,43	„ 28	13,36	19,72	11,74	,62	45,44
14,55	3,75	7,90	19,33	,46	Sept. 4	13,36	20,93	11,06	,64	45,99
14,55	3,76	8,60	20,39	,47	„ 11	13,35	22,75	11,03	,57	47,72
14,55	3,81	8,70	20,18	,46	„ 18	13,32	23,02	10,65	,70	47,70
14,55	3,68	6,19	22,99	,54	„ 25	14,04	22,84	10,29	,79	47,96

LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the THIRD QUARTER (July—September) of 1872; and in SCOTLAND and IRELAND, at the Three Dates, as under.

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. <i>Saturday.</i>	<i>London: Cleared in each Week ended Wednesday.*</i>	Private Banks. (Fixed Issues, 3,95).	Joint Stock Banks. (Fixed Issues, 2,74).	TOTAL. (Fixed Issues, 6,69).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL (Fixed Issues, 6,35).
1872.	£	£	£	£	1872.	£	£	£	£	£	£
July 6	142,04	2,67	2,38	5,05	July 13	1,86	3,45	5,32	4,17	3,26	7,43
„ 13	113,83	2,68	2,39	5,07							
„ 20	135,89	2,67	2,36	5,03							
„ 27	99,11	2,65	2,34	4,99							
Aug. 3	147,55	2,63	2,33	4,96	Aug. 10	1,80	3,42	5,23	4,14	3,22	7,35
„ 10	113,94	2,63	2,34	4,96							
„ 17	114,35	2,60	2,34	4,94							
„ 24	123,61	2,56	2,34	4,91							
„ 31	94,36	2,57	2,35	4,92	Sept. 7	1,83	3,48	5,31	4,02	3,22	7,24
Sept. 7	124,33	2,62	2,36	4,98							
„ 14	94,98	2,63	2,35	4,98							
„ 21	110,79	2,68	2,39	5,07							
„ 28	94,00	2,76	2,42	5,18							

* The Wednesdays preceding the Saturdays.

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.*

1	2	3	4	5	6	7	8	9
DATES.	London on Paris.	London on Hamburg.	New York.	Calcutta.		Hong Kong.	Sydney.	Standard Silver in bars in London.
				India Council.	At Calcutta on London.			
	3 m. d.	3 m. d.	60 d. s.	60 d. s.	6 m. d.	6 m. d.	60 d. s.	pr. oz.
1872.			per. cnt.	d.	d.	d.	per cnt.	d.
July 6	25·77	13·11	109 $\frac{7}{8}$	22 $\frac{11}{16}$	—	53 $\frac{7}{8}$	—	60 $\frac{1}{8}$
„ 20	·85	„	„ $\frac{3}{4}$	„ $\frac{3}{4}$	—	„ $\frac{5}{8}$	—	„ $\frac{3}{16}$
Aug. 3	26·10	„ $\frac{3}{4}$	„ $\frac{1}{4}$	„ $\frac{13}{16}$	23 $\frac{1}{16}$	—	—	„ $\frac{1}{8}$
„ 17	25·97 $\frac{1}{2}$	·11	108 $\frac{7}{8}$	„ $\frac{3}{4}$	—	—	—	60
Sept. 7	·90	·10 $\frac{3}{4}$	„ $\frac{1}{2}$	„ $\frac{3}{4}$	—	54 $\frac{1}{2}$	—	„ $\frac{3}{8}$
„ 21	·95	·11	108	„ $\frac{7}{8}$	23 $\frac{3}{8}$	55 $\frac{1}{4}$	—	„ $\frac{3}{8}$

INDEX TO VOL XXXV, YEAR 1872.

	PAGE
ABACUS, its use in all Russian calculations	423
AGRICULTURAL STATISTICS of Great Britain and Ireland :	
number of occupiers of land and owners of live stock, size of holdings, 1871	399
population, area, acreage, and live stock in each division, 1871 . .	400-1
acreage under crops and grass, and live stock, in 1871	402-5
ALABAMA disputes, Washington treaty on; absurd claims of the Americans, &c.	128
AMERICA, UNITED STATES OF. <i>The Pedigree of the United States</i> [from the "Pall Mall Gazette"]	541
Statement of the growth of the States in area and population since 1790 .	541
Almost all the political safeguards trusted in by the founders of the republic since swept away	541
Calculations showing that not half the present population are descended from the original British stock	542-3
ANDERSON (Sir James). <i>Statistics of Telegraphy</i>	272
Want of uniformity in our available statistics	272
The most reliable statistics of telegraphs from Belgium and Switzerland .	272
Extracts in the paper from M. Jamar's Belgian statistics and those of the United Kingdom by Mr. Scudamore	273
Tables: International Telegraph Company, messages, revenue, expenses, and produce: actual profits, 1862 and 1866	273-8
Question as to results of lowering the tariff	274-5
Great increase of messages compared to expenses under the Belgian Govern- ment, and arguments in favour of the Post Office management of the telegraph as compared with that of private companies	276-8
Table showing increase of messages from 1870 to 1872	279
Analysis of Jamar's report on the Belgian telegraph	279-86
— reduction in international tariffs not attended with corresponding increase of traffic	280
— table of product and expenses of telegraph service, 1850-69	280
— causes affecting telegraphic development, and its attendant growth of expenses	281-2
— table of correspondence of Belgian telegraph offices, 1851-69	283
— table of net annual products of Belgian telegraphs, 1850-69, and hypothesis of ditto on tariff prior to 1856	284
— international service considered: tables of annual deficits of international service since 1860, estimated traffic, &c.	287-92
— resumé and results from tables	292-97
Atlantic telegraphy, actual earnings, showing loss from reduction of tariff .	297
— duration of different tariffs	297
— number of Atlantic cables in action and projected	298-9
Indian traffic and tariffs, comparison of number of messages before and after the raising of the tariff in 1871	300
— account of ineffectual efforts made to extend telegraphy with India .	301
Telegraphic correspondence not much required for social relations external to a country	302
90 per cent. of international telegrams connected with commerce	302
Number, average cost, profit, &c., per telegram for 1869 in different countries	303-4
Ditto from commencement of lines to 1869	305-7
Necessity for reduction of tariff to encourage the use of telegrams by the natives of India	308
Egyptian traffic, probability of a telegraphic reply being obtained within the day	309

	PAGE
ANDERSON (Sir James). <i>Statistics of Telegraphy—contd.</i>	
Arguments to induce private companies to reduce their tariffs	309-12
Appendix—account of marine cables laid	313
— the heavier the cable the greater its durability	313
— loss of cables and causes of the injury	314-17
— injury from accidents and other causes during process of submerging	317
— light cables, arguments against their use	318-21
— list of cables, their length and weight and sea depth	322-6
ARMY of Russia, regular and irregular troops, &c.	351
AUSTRALIA, attractions possessed by, for emigrants	387
AXON (William E.A.). <i>On the Consumption of Tobacco in the United Kingdom, 1801-70</i>	334
The tax on tobacco an extreme type of self-imposed taxation	334
Table of revenue from excise and customs on tobacco during 1801-70.	334-6
Great extent of adulteration	337
Amount of tobacco entered for home consumption, 1801-70	338-9
Gross results, the expenditure of 578 millions on a single sensual gratification by two generations of Englishmen	340
BALFOUR (T. Graham), M.D. <i>Comparative Health of Seamen and Soldiers, as shown by the Naval and Military Statistical Reports</i>	1
Reference to Sir A. M. Tulloch's previous paper on the subject (<i>Journal</i> , vol. iv, p. 1, 1841)	1
Subsequent improvements in periods, of enlistment of soldiers, barrack accommodation, dietary, education, &c.	1-2
Equally important changes in enlistment of sailors, recruitment from trained boys, regular payment of wages, ventilation of ships, &c.	2
Home stations: comparison of the naval force on with the infantry regiments	3-10
— miasmatic diseases	5-6
— venereal, parasitic, and tubercular diseases (excess of the first and the last in the army)	7-8
— diseases of nervous, circulatory, respiratory, and digestive systems	8-9
— greater prevalence of delirium tremens, epilepsy, dyspepsia, and boils and ulcers in the navy	8-10
— excess of mortality from accidents in the navy	10
Mediterranean station: comparison with military forces	10-16
— miasmatic diseases	11-14
— eruptive fevers four times as prevalent in navy as in army	12
— cholera epidemics, at Gibraltar, Malta, &c.	13-14
— venereal and tubercular diseases (greater mortality of the latter among sailors)	14-15
— diseases of nervous, circulatory, respiratory, and digestive systems	15-16
— excess in deaths from accidents in the navy	16
Recapitulation of comparative mortality from different diseases	17
Notice of statistical sanitary reports from 1835 to the reorganisation of Army Medical Department, and their practical results in reduction of mortality from 3 to 1½ per cent. annually	18
Names of those under whose administration or assistance these results have been obtained	19-20
Appendix of tables, navy and infantry regiments, home	21-2
— ditto naval and military forces, Mediterranean	23-4
BANK OF ENGLAND, weekly return of the issue and banking departments:	
Fourth quarter, 1871 169 | Second quarter, 1872 415	
First „ 1872 263 | Third „ 563	
table of highest and lowest state of reserve and deposits, 1845-71.	469-72
— of total banking funds and bills discounted by the Bank, 1845-57	478
— of deposits, rate of discount, note reserve, bills discounted, and other securities, 1845-71	482-84
— of interest earned by the Bank on notes above bullion held, 1845-71	499
— of the annual charge on the issue, annual interest, and profit and loss, 1845-71	500
— of the average bullion and fiduciary circulation, 1845-71	522-32

BANK CHARTER ACT of 1844, its object, and its supposed evils, the natural accompaniments of the use of convertible bank notes, &c.	173-6
— its action merely as a barometer in a panic	184
— and crisis of 1866 (see <i>Chubb</i>)	171
— statistical critique on its operation, and suggestions for an improved system of issue (see <i>Seyd</i>)	458
BANK OF FRANCE, character and amount of its bill discounting	480
BANK NOTES : <i>tables</i> of notes held by the public in excess of bullion in issue department, 1845-71	464-5
the expense of their issues ten times as great as the wear and tear in coin which they are supposed to save	511
BANKS, London clearing, and amounts of promissory notes in circulation (in England and Wales, Scotland and Ireland) :	
Fourth quarter, 1871 170 | Second quarter, 1872	416
First ,, 1872 264 | Third ,, 	564
private and joint stock, weekly bank note issues, 1847, 1857, and 1866	193-4
London joint stock, deposits held by, 1861-66	195
BARLEY, average price of, 1860-70	56
BENGAL, prison discipline and statistics in Lower (see <i>Mouat</i>)	57
BILLS, commercial, danger of an unlimited issue of, and their manipulation by finance operators	185-8
account of the three classes of commercial, accommodation, and on stationary property	189-90
BIRTHS. See <i>Registration</i> .	
ILLEGITIMATE, rate per cent. in Scotland :	
Quarter Dec., 1871 159 | Quarter June, 1872	397
,, March, 1872 253 | ,, Sept., 	—
BLOCK (M.), comparison of consumption of fermented liquors with cases of crime in different countries	36
BOOKS. <i>The Book Publishing Trade in Great Britain in 1871</i> [from "Publishers' Circular"]	147
An analytical table of books published, with critical examination of the facts	147-8
standard works and periodicals published in Russia	358-60
BOURNE (Stephen). <i>The Official Trade and Navigation Statistics</i>	196
An intended classification of imports and exports, for comparison with previous decennial periods not carried out	196-7
The paper confined to a statement of the principles, sources and results of our collection of statistics	198
Methods adopted for collecting statistics: the earliest collection in 1697, and progress since under the Examiner, Inspector-General, and Board of Trade, till their fusion in the "Statistical Department" in 1870	198-200
Imports, sources of information: the master of the vessel, the importer, and the vessel's discharge accounts, and four kinds of importer's entries	200-201
— particulars required: country of origin, recent revision of the list under 112 headings, difficulties attending transit through other countries, &c.	202-4
— ditto: descriptions of goods, lists kept of 886 heads, articles of doubtful class	204
— ditto: quantities, difficulties with those not liable to duty, &c.	204-5
— ditto: values, dependent on the importer's entry, difficulties from ignorance, indisposition to tell true value, &c.; instance of great error in official value, in the case of imports of eggs from, and exports of cotton to, France	206-8
Exports: similar sources of information to those of imports, and greater correctness of weights and values	208-9
Nature of records and publications: extent of the documents which have to be dealt with, periodical returns to Parliament, weekly account of corn, monthly, quarterly, and annual returns of trade, and fifteen years' abstract	209-10
Alterations in the system last year on the report of a Treasury Committee, into monthly, transitory, and annual permanent accounts, &c.	211-12
— substitution of a declared for a computed value, and the fusion of the two statistical offices into one	213

	PAGE
BOURNE (Stephen). <i>Official Trade and Navigation Statistics—contd.</i>	
Bill of entry: of ships arriving and sailing, their cargoes, &c., issued by a patented office separate from the Customs, but the profits of which are received by the Customs' Benevolent Fund.	214
Conclusion: summary of the objects, nature, preparation, and publication of trade statistics, recent alterations, &c.	215-16
Table of imports, exports, customs' duties, and population, 1851, 1861, 1871.	217
BROWN (Samuel). <i>Report on the Eighth International Statistical Congress, held at St. Petersburg, August, 1872</i>	431
Gradual improvement as regards uniformity in governmental reports of different countries	431
Organisation commission, members; questions for the "avant-congrès," &c.	432
Programme of subjects to be discussed	433
Opening and constitution of the "avant-congrès," and address of M. Semenow	434
Summary of the work of the "avant-congrès;" questions of publishing international comparative statistics	435-6
— organisation of the Congress, proposed permanent commission, propositions submitted, and conclusions ultimately adopted	436-9
Opening of the Congress in the Salle de la Noblesse, and address of the Grand Duke Constantine	439-41
— on the modes of statistics and their peculiar applicability to Russia, from its geographical position, and less complex political and social life	440-41
Names of vice-presidents of the permanent bureau	442
Reference to the names of eminent statisticians deceased since the last congress	442
First section: questions relating to the population censuses	443-5
— registration of facts relating to the physical condition of man	445
— sanitary statistics and graphic and geographical method	446-7
Second section: methods of registration, facts to be registered, and their official publication	447-8
— registers of population, and special registers for prostitution	448-9
Third section: general industrial statistics, occupations, and mines and factories	449-51
Fourth section: postal statistics, commercial statistics	451-3
Fifth section: criminal statistics, nomenclature of crimes, &c.	453-5
Invitations for the next congress, addresses at the close of the Session, and summary of Russian hospitalities	455-7
BULLION AND SPECIE, gold and silver, imported and exported:	
Jan.—Dec., 1869-71 . . . 165	Jan.—June, 1870-72 . . . 411
Jan.—March, 1870-72 . . . 259	Jan.—Sept., „ . . . 559
CANADA. <i>Work and Wages in</i> [from "Pall Mall Gazette"]	388
Classes of labour most in demand, agricultural and general handicrafts, and the demand almost unlimited	388
Averages, wages, and prices of food	388
CASTE, error of disregarding, in treatment of prisoners under trial	66-7
CASTES OF INDIA, relations between, and classes of crime	59-64
special crimes of each, and those from which the criminal classes are chiefly recruited	62-3
CENSUS, calculations of time occupied in abstracting ages, condition, &c., from the family schedules	421-2
CENSUSES in North and South America, and in India	424-5
CHINESE, their hard work and thrift in Australia	387
CHOLERA epidemics at Gibraltar, Malta, &c.	13-14
CHUBB (Hammond). <i>The Bank Act and the Crisis of 1866</i>	171
Reference to the question of publishing papers read before the Society, without the discussion following them	171
This paper, partly in reply to Mr Patterson on rate of interest during monetary crises (in vol. xxxiv)	171
Dangerous character of the definitions of two terms, "the functions of banking," and "banking currency"	172
The object of the Bank Act, the security and convertibility of bank notes, by the index of the foreign exchanges	173
The supposed evils of the Act, the natural accompaniments of the use of convertible bank notes, with a regulated issue	173
Impossibility of securing the validity of the bank note without its convertibility	174

CHUBB (Hammond). *The Bank Act and the Crisis of 1866—contd.*

Diminution of the issues of country banks in the drain on the Bank of England, and crisis of 1866	174
Statement of the evils commonly attributed to the Bank Act system, and the supposed advantages of some other system	175
The subject apparently regarded only from the point of view of the ruined trader	175
The Bank Act only brings money when scarce under the ordinary law of prices	176
Error of regarding property as money, and that a banker's duty is solely the exchange of the former for the latter	176-8
Trade, a nation's prosperity only as carried on within safe limits, and the rate of discount the measure of its restriction	176-8
Error of wishing for a currency which shall be capable of any degree of extension independent of other nations (with illustrative example)	177-8
The panic of 1866 a banking or financial one, and its cause, the enormous sums borrowed by bankers and other commercial houses, at interest from private lenders, and employed in discounting the worthless finance bills of hazardous undertakings	179-80
Amount of losses of Overend, Gurney, and Co. from advances on unsound undertakings	180
The Chatham and Dover Railway, account of the mode of raising capital through its contractors, and its "mobilisation" by the bankers	181
— fictitious character of the scheme from first to last, as represented by fabricated bills having the form of true commercial ones	182
The continued recurrence of crises to be expected with considerable regularity, and their necessity unless unsound enterprises can be otherwise put a stop to	183-4
The Bank Act merely acts as a barometer in a panic	184
The introduction of a second or false currency in the shape of an unlimited issue of commercial bills	185
This currency the real danger, and not that regulated by the Bank Act	186
The means adopted by finance operators to give it a semblance of true currency	186-7
The real characteristics of bills, and the principles necessary to keep them from becoming harmful	188
Three classes of bills: the commercial bill, representing the capital of goods passing through a dormant condition	189
— accommodation bills, their doubtful propriety, and contemptible character in their grossest form	190
— bills based on stationary property improperly considered as commercial bills	190
The crisis of 1866 due to the introduction of the spurious currency of the third class of bills, and the real remedy to be sought in their regulation	191-2
<i>Tables</i> —weekly bank note issues of private and joint stock banks, 1847, 1857 and 1866	193-4
— deposits held by London joint stock banks, 1861-66	195
— firms and companies to which Overend, Gurney, and Co., had made advances	195

CIRCULATION. See *Currency, Banks.*

COINAGE of Gold. See *Gold.*

COLONIES OF GREAT BRITAIN, on the (see <i>Hamilton</i>)	107
their proportionate area to Great Britain as 52 to 1	116, 127
Colonial Office policy, its tendency to prepare them for separation, and objections to the same	107-8
exports of home produce to, benefits of, with illustrative examples	108-13
large proportion of British shipping in our trade with our	114
summary of their advantages to us and themselves, and cost to us	{ 117-18 126
value to us as stations in case of war	120-21
necessity of drawing closer the ties that bind them to the old country	122
<i>Military Expenditure on the Colonies</i> [from the "Times"]	544
Expenditure from 1869 to 1872 and colonial repayments: sums voted and sums repaid by each colony	544
Regimental force of all ranks in the colonies.	544

COMMERCE. *General Results of the Commercial and Financial History of 1871* [from the "Economist"]

Summary of military and political events: Franco-German war, Paris, the "Commune," French loans, Italy, and Spain	127-8
— Washington treaty on the Alabama disputes, monstrous and absurd claims of the Americans, future position of Canada	128

	PAGE
COMMERCE. <i>Commercial and Financial History of 1871—contd.</i>	
Summary of military and political events: error of Germany in its severe treatment of France, and probable early recommencement of the war in consequence	128-9
— loss of life in Paris during 1870-71	129 (<i>note</i>)
— failure of the "Credit Immobilier" Company	129 (<i>note</i>)
— immense wealth of France, and its non-exhaustion by the war	129-30
— parsimony and saving of the French population.	130
Character of the harvest of 1871, average price of wheat, 1863-71	131
Commercial interest of the western states of Lake Erie greater with Montreal and Halifax than with New York and Boston	132
Exports of gold and silver to the east, production of new gold, &c.	132-3
Cotton trade, value of imports, &c., 1857-71, cotton cloth and piece goods, American cotton crops, &c.	134-7
Iron and other trades, rise of wholesale prices and of wages in 1871	137-8
Money market, sharp pressure, on in September, October, 1871; and its causes, bank rates, weekly returns, note circulation, &c.	138-142
Rates of interest in Europe, 1867-71	142
Variations in wholesale prices showing great increase since January, 1871, but generally lower than in 1857	143
Railways, receipts and percentage increase, 1865-71	144-5
Excessive and incessant manufacture of new companies, many soon to be in course of liquidation, &c.	145
Doubtful character of American mining shares offered in England	145-6
Results of the Suez Canal on the India and China trade	146
Extension of railways, telegraphs, &c.	146
COMPANIES, excessive and incessant manufacture of new, 1871	145
CONGRESS, Eighth INTERNATIONAL STATISTICAL, <i>Synopsis of the International Congress at St. Petersburg, August, 1872, with Names of Delegates</i>	238
Digest of the programme of the Eighth Congress at St. Petersburg, 20th August, 1872, by Dr. Mouat	238
Details of subjects of each Section	239-42
Delegates appointed by the Statistical Society	242
notice of	418-20
report (see <i>Brown</i>)	431
CONSTANTINE (Grand Duke), addresses at the St. Petersburg Statistical Congress	439-41 } 456
CORN—	
average weekly prices (with monthly and quarterly averages):	
Fourth quarter, 1871 168	Second quarter, 1872 414
First " " 1872 262	Third " " 562
COTTON. <i>Cotton Blooming</i> [from the "Manchester Guardian"]	544
Table of first bloom, of killing frost, and extent of crop, 1836-71	545
COTTON TRADE, value of imports, 1857-71, cloth, crops, &c.	134-7
COUNTY COURTS. <i>Analysis of the Business in 1870</i> [from the "Times"]	149
CREDIT IMMOBILIER COMPANY, failure of	129 } (<i>note</i>)
CRIME in London, 1869-71 [from the "Pall Mall Gazette"]	384
Tables of committals and summary convictions, showing decrease in the former and increase in the latter, accounted for by prosperous times in which serious crime diminishes but lighter offences increase	384-5
CRIMINALS, castes and classes of, in Lower Bengal	59-64
CRISES, MONETARY, their continued recurrence to be expected with considerable regularity	183-4
caused by the unlimited issue of commercial bills manipulated by finance operators, and not by the regulations of the Bank Act	186-8
of 1866 and the Bank Act (see <i>Chubb</i>)	171
— diminution of the country bank issues in	174
— a banking or financial one, its chief cause, &c.	179-80
— caused by the spurious currency of bills on stationary property	191-2

	PAGE
CURRENCY, error of wishing for one capable of any degree of extension, independent of other nations	177-8
false character of that of an unlimited issue of commercial bills, its real danger, &c.	185-7
METALLIC, probability of a permanent surplus of, being absorbed by a rise in the price of commodities	475
DEATH. See <i>Mortality, Registration.</i>	
DESERTERS. See <i>Recruits.</i>	
DISEASES, miasmatic, venereal, and other diseases, comparison of, among soldiers and seamen on the home stations	5-10
ditto, on the Mediterranean station.	11-16
DIVINITIES, tutelary, of the Coles of Bengal	63-4
DOMESDAY BOOK, reference to	417
DRUNKENNESS, question of the increase of, 1860-70, and effects of density of population, prosperity, &c., on	33-6
excess of committals for, in Ireland	34
committals for	50-56
See <i>Levi</i> on Fermented Liquors.	
DYSENTERY AND DIARRHŒA, mortality among prisoners in India from	89
EDUCATION among prisoners in Bengal	83-4
EMIGRATION, proportions of, to the Colonies and the United States .	115
EMIGRATION from <i>British Ports</i> [from the "Times"]	385
Value of the report of the Emigration Commissioners	385
Variation in the relative amounts from England, Scotland, and Ireland, and of foreigners during the last eight years	386
Growth of family connections as a cause of increasing emigration	386
Attractions possessed by Australia for emigrants, high wages, &c.	387
Providence of the Chinese in Australia	387
EXCHANGES (FOREIGN), quotations on London, &c.:	
Oct.-Dec., 1871 170 | April-June, 1872 416	
Jan.-March, 1872 264 | July-Sept., „ 564	
EXPORTS, United Kingdom:	
Jan.-Dec., 1867-71 163 | Jan.-June, 1868-72 409	
Jan.-March, 1868-72 257 | Jan.-Sept., „ 557	
EXPORTS of home produce to the Colonies, benefits of, <i>tables</i> showing their proportions, &c.	108-11
sources of, and modes of obtaining official statistics on	208-9
and imports, increase in 1870 over 1860	221
FARR (William), M.D. <i>Inaugural Address at the Society's Rooms,</i> <i>Tuesday, 19th November, 1872</i>	417
References to "Domesday Book," the bills of mortality, and important writers on statistics	417
Notice of the International Congress at St. Petersburg, 1872, its numbers, delegates, and discussions	418-20
Possibility of adjusting the metric system with our English sovereign, &c.	421
Evils of inconvertible paper money as affecting the value of statistics	421
Calculations of time occupied in abstracting ages, conditions, &c., in the English census plan of family schedules	421-2
Reference to the Italian, Russian, and Prussian system of individual schedules	(and note)
Use of the abacus in Russian calculations	422
Liberal reception of the Congress in Russia	423
Prospects of the spread of statistics in Russia, and China, &c.	424
Censuses in North and South America and in India	424-5
Want of correlation in the census tables and the official statistics of England, Scotland, and Ireland	426
Suggestion of a general representative board for the statistical departments .	427
Reference to constituent changes in the council of the Society, proposals for alterations in the <i>Journal</i> , &c.	427
Notices of the deaths of M. Hopf, Mr. A. Fonblanque, and Colonel Sykes	428-30

	PAGE
FERMENTED LIQUORS, on the limits of legislative interference with the sale of (see <i>Levi</i>)	25
average consumption of, among the population	31-2
reduction in, since the last century	32
capital and persons employed in trade of	44
<i>tables</i> of revenue from, consumption, duties, &c.	45-9
— of consumption, 1721-1871, and 1830-70	{ 46-7 49-50
opinions on pernicious or non-pernicious effects of	25-6
FEVER, MALARIOUS, from the geological change in the delta of the Ganges	88-9
ERUPTIVE, four times as prevalent in navy as in army	12
FINANCIAL HISTORY of 1871. See <i>Commerce</i> .	
FONBLANQUE (Albany). Obituary notice of	428
FOOD. See <i>Prices</i> of.	
FRANCE, immense wealth of, and its non-exhaustion by the war.	129-30
parsimony and saving of the population of	130
enormous absorption of gold coin by	378
GERMANY, error of, in its severe treatment of France, and probability of early war in consequence	128-9
GLOVER (John). <i>Tonnage Statistics of the Decade 1860-70</i>	218
Notice of previous paper on those of 1850-60 (vol. xxvi, p. 1, 1863)	218
Increase of foreign tonnage in our trade in 1860 to double that of 1850 after the repeal of the Navigation Laws	218
The depression in our shipping met by building more ships, larger, finer, and more economical carrying machines	218
Great decrease in American shipping in our carrying trade caused by their civil war, and transfer of the trade to English vessels	219
Profitable employment of British shipping in the Abyssinian war	219
Excessive increase in iron steam vessels (144 per cent. in the decade) and decrease of wooden ships	220
Dearness of wooden ships from being built of imported materials, compared with iron vessels produced from our own mines and labour	220
The proportion of British to foreign tonnage (70.18 to 29.82 per cent.) the same now as before the repeal of the navigation laws	220
Increase of exports and imports in 1870 over 1860 (43 per cent., from 375 to 547 millions sterling)	221
Total entries and clearances, total tonnage at British Ports, in the foreign trade, and coastwise, British and foreign tonnage, with cargoes only and in ballast, &c.	222-4
Tonnage of nationalities in our trade, 1860-70, showing increase or decrease	225
Total tonnage of steamers, number of vessels, size, &c., in 1860-70	226-7
Number and tonnage of sailing and steam vessels in home and foreign trade, their size, and men employed	228
Increasing number of sailing vessels, and men employed, and decrease in size in the home trade, and exact reverse in the foreign trade, increase of steam vessels, &c.	229
Continued increase of our own flag in our carrying trade, and the competing foreign steamers almost all British built	229
Danger of too much Parliamentary interference and special legislation on shipping	230
GOLD. <i>The Coinage of Gold for Twenty-Four Years</i> [from the "Economist"]	376
Nearly 600 millions of gold coined at the four principal mints since 1848, equal to the existing stock in the world at that date	376
Quick diminution in rate of coinage since 1857	377
Total coinage in quinquennial periods, 1848-71	378
Enormous absorption of gold coin by France	378
Circumstances neutralising the effect of the increased supply; increase of population and wealth	379
— increase of exports and imports since 1848 to double the amount	380-81
Circumstances aggravating the effect of increased supply: the spread of banking and cheques, and in a small measure the inconvertible currencies in America and France	381-2
<i>Tables</i> of the coinage of gold, 1848-56, and since 1856 in England, France, the United States, and Sydney	382-3
exports of the East, production of new, &c.	132-3
GOLD DISCOVERIES, question as to their having no direct action in raising prices	232-3

	PAGE
HAMILTON (Archibald). <i>On the Colonies</i>	107
Apathy with regard to the continuance of our colonial empire	107
Colonial Office policy: its tendency to prepare the colonies for separation, by handing the control of their affairs into their own hands, the withdrawal of troops, &c.	107-8
— necessity of seriously examining whether it would not be wiser to draw them closer to us	108
Exports of home produce: their benefit to us not the merchants' profit only, but the aggregate value as including wages and profits	108
— enumeration of equivalents showing that the same total benefit is obtained in cases of imported raw materials	109
— table showing increase per cent. of our exports to colonies and foreign countries, 1850-69 over 1840-59	110
— table showing large proportions of British produce to total imports in our colonies to that of other countries	111
— Goldwin Smith's argument that our trade with the colonies would be increased if they became independent not supported by parallel circumstances when the United States became so, our colonies abroad enjoying free trade	111-12
— illustrative examples showing how "the trade follows the flag" in Canada, Cape of Good Hope, and Mauritius	112
— benefits to our commerce of the connection of our middle classes with friends and relations in our colonies	113
— few marriages between Canadians and Americans	113
Shipping: large proportion of British tonnage in our colonial trade	114
Colonists who return: benefits to the old country of the return of wealthy colonists	114
Emigration: proportion to the colonies and to the United States, and injury to us of the Irish emigration to the latter	115
Proportionate area of Great Britain to her dependencies as 1 to 52	116
Advantages to the colonies: their reciprocal character with those to the home country, and the value of their connection with a first-rate power	116
Cost of the colonies: error of including in it the cost for gaols, police, and military in West Australia and Tasmania during nineteen years, while penal settlements, and their cost therefore imperial, not colonial	117
— the Treasury revenue on exports to, greater than the cost of the colonies	117-18
— our trade with foreign countries carried on at the expense of the diplomatic and consular services	119
Colonial tariffs: their duties on imports necessary for income, as direct taxation is not applicable to sparsely-peopled countries	119-20
In case of war: value of our colonies as naval and military stations, and in supply of coal to our navy	120-21
Foreign supplies of the necessaries of life to the value now of 58 million pounds per annum	120
Arguments of sentiment: necessity of regard to in the government of mankind	121-2
Prospects of a still grander and homogeneous empire by drawing closer the ties that bind the old country and its colonies	122
Tables: average of exports to, consumption of British produce per head, and British tonnage in the trade of our colonies and foreign States	123-5
— cost of the colonies, 1853-71	126
— proportional area of Great Britain and her colonies	127
HARVEST, character of that of 1871	131
HEALTH, comparative, of seamen and soldiers (see <i>Balfour</i>)	1
HINDOOS, statements illustrating the low condition of their mind	61
IMMIGRATION. See <i>Emigration</i> .	
IMPORTS, sources of, and modes of obtaining official statistics on	200-208
IMPORTS, United Kingdom:	
Jan.—Dec., 1867-71 162 | Jan.—May, 1868-72 408	
Jan.—Feb., 1868-72 256 | Jan.—Aug., „ 556	
INDIA, high mental powers and domestic virtues of people of	96-7
castes of. See <i>Castes</i> .	
prisons of. See <i>Prisons, Mouat</i> .	
INTEREST, rates of, in Europe, 1867-71	142
IRON TRADE, rise of wholesale prices and wages in, in 1871	137-8
JAMAR'S (M.) Belgian statistics of telegraphy, extracts from	273-97

	PAG.
JEULA (Henry). <i>Some Statistics relating to the Traffic through the Suez Canal, to Merchant Vessels touching at St. Helena, and to Losses Posted on "Lloyd's Loss Book"</i>	327
Traffic through the Suez Canal, proportion of tonnage of various countries, and in each month	327-8
Merchant vessels touching at St. Helena, variations in number and tonnage in 1869-71	329-30
Losses posted on "Lloyd's Loss Book," percentage of their increase or decrease in 1871, and monthly percentage	330-33
LABOUR, classes of, in demand in Canada	388
of prisoners in India, questions relative to	73-83
LAND. See <i>Agricultural Statistics</i> .	
LAND TENURE in Russia, emancipation of serfs in 1861, &c.	352-3
LEVI (Leone). <i>On the Limits of Legislative Interference with the Sale of Fermented Liquors</i>	25
Important character of the statistics of morals	25
Opinions as to the pernicious or non-pernicious effects of fermented liquors on society	25-6
Home and foreign productions, amount of fixed and floating capital invested in malt liquors, and in spirits, &c.	26-7
Capital invested in public-houses in London and other large towns and villages, floating capital in wages, licences, &c.	27-8
Comparison with other manufactures and number of persons subsisting from this industry	28
Proportion of revenue raised from beverages in England, Russia, France, and Belgium	29
Proportion of the malt tax and spirit duty to the cost of production	29
Reduction of the foreign spirit and of the wine duty	29-30
Objectionable character of the licence duty	30
Notice of changes in licence laws as a matter of police, since 5th Edward VI.	30-31
Average consumption of fermented liquors among the population (in reduction to proof spirits only 0.33 gill per day per head among the whole population)	31-2
Reduction in consumption of malt and spirits per head since the last century	32
Question of the increase of drunkenness, number of committals in 1860 and 1870, causes of their increase, &c.	33-4
Excess of committals for drunkenness in Ireland	34
Increase of drunkenness not connected with increase of public houses, restriction of licences, &c.	34
Comparative density of population in Manchester, Leeds, Liverpool, and London, as affecting drunkenness	35
Increased prosperity of Manchester since 1866, contemporary with increase in committals	35
Increase of consumption per head, with increased prosperity of last fifteen years	36
Increase of committals for drunkenness not attended with increase of crime	36
Notice M Block's comparison of consumption of fermented liquors, with cases of crime in different countries	36
Decrease in percentage of pauperism and increase of capital in savings banks	36-7
Proportion of cost of drink to the entire cost of living, 14 per cent.	37
Questions of legislative interference for repression of intemperance	37
Effects of Forbes Mackenzie's Act in Scotland in 1853, in reduction of committals, &c.	38-9
Proposals of Mr. Bruce's Bill (1871), and probable effects had it passed	39
Reduction of licences effected by Sir Selwyn Ibbetson's Act	40
The vice of drunkenness to be combated by private effort, the inculcation of good habits, &c.	40-41
Appendix of <i>tables</i> , capital engaged	42
— prices of public houses	43
— capital and persons employed in liquor trade	44
— revenue from spirits, malt, wine, and licences	45
— consumption of fermented liquors, 1870, averages 1721-1871	46-7
— quantities charged with duty, 1830-68	47-9
— total consumption, 1830-70, and comparison, 1859, and 1869	49-50
— committals for drunkenness in England and Wales, metropolis, counties, and boroughs, and the army	50-56
— average price of barley, 1860-70	56
LICENCE DUTIES, their objectionable character	30
notice of changes in, since Edward VI	30-31
LONDON. See <i>Crime</i> in.	
LUBBOCK (Sir John), address in the House of Commons relative to the grant to learned societies	373-5

	PAGE
MARRIAGES. See <i>Registration of</i> .	
MARRIAGES, few between Canadians and Americans	113
MERRINGTON'S (Mr.) report from Gya on the castes of the criminal classes	62-3
METEOROLOGICAL TABLES (general and special), by James Glaisher :	
Dec. quarter, 1871 156-7 | June quarter, 1872	394-5
March ,, 1872 250-51 | Sept. ,, 	551-2
METRIC SYSTEM, possibility of adjusting it with the English sovereign, &c.	421
MICHELL (Robert). <i>Summary of Statistics of the Russian Empire</i>	341
Superficial extent, one-ninth of the dry surface of the globe, 389 million square miles	341
Form of Government, the Emperor, Council, Senate, Synod, Chancery, &c.	342
— duchy of Finland and kingdom of Poland	343
Weights, measures, and money: comparison of Russian, English, and metric systems	344
Population: process of "revision" in place of a census, estimated number in the empire 82 millions, division of the rural population, immense size of the provinces, town population	344-7
— ratio of the sexes, and proportion according to ages	347-9
— increase and movement of the population, and percentage in each of the first five decades of the century	349-50
— fecundity and distribution	350
Army and navy, regular and irregular troops, peace and war footing, Baltic and Black Sea fleets, &c.	351
Land tenure, emancipation of serfs in 1861, by which they became tenants under communes, and distribution of cultivable lands	352-3
Land, principal modes of cultivation, area of cultivable land, and proportion to general area	353-5
Education, number of establishments and of students, and sums expended by the Government in 1870	355-7
Publications: standard works and periodicals, importation of foreign works, and classification of journals	358-60
Products of Russia, natural and artificial, exports of grain, 1867-70, &c.	360-2
Industries, arranged in groups	362
Foreign trade, its value in periods of five years, 1819-68, exports and imports compared, and commercial relations with different countries	363-5
Railways and finance	365-6
Tables of population, and of births, deaths, and marriages	367-8
— balance sheet of redemption operation, 1869	369
— present approximate distribution of cultivable lands in Russia	370-71
— value of manufacturing industries	372
MILITARY EXPENDITURE. See <i>Colonies</i> .	
MINING SHARES of America, doubtful character of those offered in England	145-6
MONEY, comparison of Russian, English, and metric systems	344
MONEY MARKET, sharp pressure in, in September—October, 1871	138
uncertainty of, as illustrated in the rates of 1857, 1866, and 1872.	486
MORALS, importance of statistics of	25
MORTALITY of England and Wales, annual rate per 1,000 in eleven divisions, in town and country districts and in special towns :	
All quarters, 1869-71 .153-4 | All quarters, 1871-72	391-2
,, 1870-72 .247-8 | ,, ,, . . . . .	548-9
London Bills of, reference to	417
comparative, from different diseases, in army and navy	17
proportionate, of Hindus, Mahommedans, &c.	92
MOUAT (Frederic John), M.D. <i>On Prison Discipline and Statistics in Lower Bengal</i>	57
Three years included in the paper, 1861-69, in continuation of two former papers in the <i>Journal</i> up to 1864	57
The author's experience that of fifteen years' control over sixty prisons, containing a daily average of 20,000 prisoners	57
Discussion of the two opposite theories of imprisonment	58-9
— evil effects on body and mind of the severe system of solitary confinement, silence, &c., and without any influence in diminishing crime	58
— right of the State to provide by schools of industry for the reformation and restoration to society of the criminal	59

	PAGE
MOUAT (Frederic John). <i>On Prison Discipline—contd.</i>	
Castes and classes of criminals in Lower Bengal	59-64
— instructions relative to inquiries as to the relation between castes and crimes, as illustrated by Thuggee and Dacoity	60
— influence of caste weakened near the centres of government and education, but still strong among the people	61
— statements illustrating the low condition of the Hindu mind	61
— report from Gya (Behar) by Mr. Merrington, showing the castes from which the criminal classes are chiefly recruited, and the special crimes of each caste	62-3
— crimes becoming more indiscriminate as caste influence declines	63
— tutelar divinities among the Coles, to whom all evils are assigned, and belief in witch-finders among the Coles of south-west Bengal	63-4
Prisoners committed to gaol, 1865-69, and their disposal	64-9
— imprisonment without labour, among hardened criminals, a mere training school of vice and crime, especially among women	64-5
— sentences of death (only one to each million of population), nature of the crimes for which sentenced, &c.	66
— large amount of sickness and death among prisoners under trial (60 per 1,000)	66, 68
— errors in disregarding caste prejudices in treatment of prisoners under trial	66-7
— these feelings much more studied by the old East India Company than by their successors	67
— the innocent the chief sufferers from sickness, from their fear of condemnation from false testimony	68
— the remedy, the separation of places for prisoners under trial from the usual gaols	68
— serious evil of wives and children of prisoners left without protection, but to the credit of the people not allowed to starve, nor driven to crime	69
— religious sects of prisoners	69
Classification of prisoners	70-73
— insecure, defective, and insanitary state of all the gaols	70
— demoralising associations of prisoners, and its remedy in the separation of the same classes of offenders, caste already acting in separation of the different classes	70-71
— arguments in favour of the adoption of the separate system, though opposed by the Government of India	71-3
Labour and employment of convicts	73-83
— account of the attempts to carry out the industrial system and solitary confinement in Bengal, and the disadvantage under which it was worked	73-6
— productive industry of the gaols, 1856-70	77
— objections to the resolutions of the "Norwich National Trades' Congress" against convict labour	77-80
— mischievous effects of the Government underselling free manufacturers allowed	78, 80
— case of tent cloth manufactured in gaols during the Sepoy revolt, refused by the Government at the market value, and afterwards taken by them at a higher price after sale in the open market	78-9
— injurious character of the association of prison labour with degradation in the public mind	81
— prison labour should be considered an alleviation, not an aggravation of imprisonment	82
Education: percentage who could read and write, &c. (80 per 1,000) an illustration of the state of education in Bengal	83-4
Sickness and mortality, &c.	84-93
— death-rates, 1843-67, 81 per 1,000, and saving made since	85-7
— false economy of the Government in using educated prisoners as record clerks	86
— mortality among European prisoners not so great as supposed, and more referable to their dissipated character than to climate, &c.	87
— prisoners commonly cheated of part of their food by use of fraudulent scales before 1855	87-8
— malarious fever from the geological change in the delta of the Ganges	88-9
— mortality from dysentery and diarrhœa	89
— extracts from report for 1867 in favour of cellular prisons and separation of prisoners	90-91
— large number of old people in prison	91
— proportionate mortality of Hindus, Mahommedans, &c.	92
— references to other statistical returns by the author, the Indian gaol committee, &c.	92-3
Concluding remarks: employment of well-conducted prisoners in gaols, graduated system of labour, and merits of industrial training and education	93-5
— on the statesmanlike views of the governors of Bengal, and high mental powers and domestic virtues of the people of India	96-7
Tables: commitals, releases, religion, education, deaths, sickness and mortality, and cost of prisoners	98-106

	PAGE
NAVIGATION. See <i>Trade Statistics</i> .	
NAVIGATION LAWS, repeal of; increase of foreign tonnage in our trade since	218
the proportion of British to foreign tonnage the same now as before their repeal (70 to 29 per cent.)	220
NAVY. See <i>Seamen</i> .	
of Russia, Baltic and Black Sea fleets, &c.	351
OVEREND, GURNEY, and Co., amount of their losses from advances on unsound undertakings	180
list of firms and companies to which they had made advances	195
PANIC. See <i>Crisis</i> .	
PARIS, loss of life in, during 1870-71	{ 129 (note)
PATTERSON (R.H.) On the rate of interest (in vol. xxxiv), reply to. See <i>Chubb</i> .	
PAWNBROKERS. <i>Pawnbrokers</i> [from the "Pall Mall Gazette"]	543
Number of licences issued to pawnbrokers in Great Britain, showing an increase of 84 per cent. to an increase of population of 24 per cent. in twenty years	543
POPULATION OF RUSSIA, estimated number, ratio of sexes, ages, movement, and distribution	344-50
<i>tables</i> of, and of births, deaths, and marriages in Russia	367-8
see <i>Census</i> .	
PRICES:	
<i>table</i> of consols and provisions, with pauperism and temperature, 1871-72	{ 153, 247 391, 548
comparative lists of, 1871-72, showing increase	234-5
wholesale, great increase in, since 1871, but lower than in 1857	143
of food in Canada	388
<i>The Rise in Prices</i> [from the "Birmingham Daily Post"]	231
Six previous times of inflation of prices, ten years apart, followed by collapses, 1816-66	231
Each of the vicissitudes caused by the accumulation of capital wanting employment, from savings following a previous collapse	231
Question as to the gold discoveries having no direct action in raising prices, but the restrictions attending their rise not felt so soon	232-3
Comparative price lists, of September 1871, and June, 1872, showing percentage of increase	234-5
PRISONS. Discussion of the two opposite theories of imprisonment	58-9
evil effects of solitary confinement	58
extracts from reports for 1867, in favour of ditto	90-91
discipline and statistics of, in Lower Bengal (see <i>Mouat</i>)	57
demoralising association of prisoners in, in India	70-71
arguments in favour of the separate system in, in India	71-3
productive industry of, in India, 1856-70.	77
PRISONERS, classification of, in India	70-73
in India, <i>tables</i> of committals, religions, deaths, and cost of	98-106
see <i>Criminals</i> .	
PUBLIC HOUSES, capital invested in, in London and other large towns and villages	27-8
<i>table</i> of prices of	43
RAILWAYS, prices and traffic:	
Jan.-Dec., 1871 168 | Jan.-June, 1872 414	
Jan.-March, 1872 262 | Jan.-Sept., ,, 562	
receipts and percentage increase 1865-71	144-5
VOL. XXXV. PART IV.	2 Q

RAILWAYS—*contd.*

the Chatham and Dover Railway, account of the mode of raising capital for, through its contractors, and its "mobilisation" by the bankers	181-2
&c. of Russia	365-6

RECRUITS. *Recruits and Deserters*, comparative statement of, for ten years, 1861-70 [from the "Times"] 149

REGISTRATION of marriages, births, and deaths, (serial *tables*) :

Quar. Sept.-Dec., 1871	151	Quar. March-June, 1872	389
„ Dec.-Mar., 1871-72	245	„ June-Sept., „	546
divisional <i>tables</i>			{ 155, 249
			{ 393, 550
annual rate per 1,000, 1865-72			{ 152, 246
			{ 390, 547
special <i>table</i> of twenty-one large towns			{ 154, 248
			{ 392, 549

see also *Mortality*.

ditto, Scotland,

(serial, average, bastardy, and divisional *tables*) :

Quarter, Dec., 1871	158-60	Quarter, June, 1872	396-8
„ Mar., 1872	252-4	„ Sept., „	553

summary of Great Britain and Ireland :

Quar. Sept.-Dec., 1871	160	Quar. March-June, 1872	398
„ Dec.-Mar., 1871-72	254	„ June-Sept., „	554

REVENUE, net produce of, and application, &c., in years and quarters ending :

Dec., 1868-71	166-7	June, 1869-72	412-13
March, 1869-72	260-61	Sept., „	560-61

proportion raised from beverages in England, Russia, France, and and Belgium 29

RUSSIA, summary of statistics of (see <i>Michell</i>)	341
population of, number, ratio, sexes, ages, and distribution, &c.	344-50
army and navy, Baltic and Black Sea fleets	351
land tenure and cultivation, &c.	352-5
present approximate distribution of cultivable lands in	370-71
form of government, &c.	342
educational establishments, and publications, journals, &c., in	355-60
products of, natural and artificial, exports, and industries	360-62
foreign trade of, 1819-68	363-5
railways and finance of	365-6

SAILORS. See *Seamen*.

important changes in enlistment of, &c. 2

ST. PETERSBURG, report of the International Statistical Congress at (see *Brown*) 431

SANITARY REPORTS of the army and navy from 1835, notice of 18

SCUDAMORE'S (Mr.) Statistics of Telegraphy in the United Kingdom, extracts from 273-9

SEAMEN, excess of mortality, from accidents, in 10, 16

and soldiers, comparative health of, as shown by the Naval and Military Statistical Reports (see *Balfour*) 1

SECTS (RELIGIOUS) of prisoners in India 69

SEMENOW (M.), address at the St. Petersburg Statistical Congress 434

SEERFS, emancipation of, in Russia, in 1861 352-3

balance-sheet of redemption operation, 1869 369

	PAGE
SEYD (Ernest). <i>Statistical Critique on the Operation of the Bank Charter Act of 1844, and Suggestions for an Improved System of Issue</i>	458
The two extreme parties, one in favour of free banking, and the other of the Bank Act	458
The conferring of the right to issue notes on joint stock banks to meet scarcity of money shown to be useless, by the contractions of country bank issues in times of crises, &c.	458-9
The proposal to transfer the issue of notes to the Government impossible, except the notes be inconvertible	459
Wildness of the schemes of all fiduciary bank issues, their attendant evils, and inferiority to one based on metal	460
The Bank Act not to be defended on the principle that the fault lies only with the public	461
First principles on which an issue of notes should be conducted	461
Intention of the Act to secure the convertibility of the bank note, carried out, by its suspension	462
The controversy on the extra issue of fifteen millions on Government securities	463-3
Benificent intention of this issue to provide the public with the additional 15 millions to encourage commerce and industry, and its failure	464-75
Small portion of these notes which have been at any time in the hands of the public	464
Tables of notes held by the public in excess of bullion in issue department, 1845-71	464-6
Utter inactivity of these balances held as reserve by the Bank, and indifference to the public of their being in the issue or banking departments	466-7
Supposition that the increase or decrease in the reserve is consentaneous with that of deposits disproved by the returns	467-8
Table of highest and lowest state of reserve and deposits, 1845-71	469-72
The bank-rate raised or lowered, in changes of the issue department at four times the amount required in ordinary banking to meet changes in the money market	473
Bullion never in surplus, except in the one instance of June and July, 1870, from exceptional import from France after the war	474
Probability of a permanent surplus of metallic money being absorbed by a rise in the price of commodities	475
Question as to the profitable character of the issue as a reserve to the Bank	476-7
Table of the total banking funds and bills discounted by the Bank, 1845-57	478
Small comparative amount of discounting business done by the Bank	477-9
Character and amount of the bill discounting of the Bank of France	480
Collateral movements of the Bank, and market rates of discount	481
Analysis of the causes of the sudden and extraordinary changes in the rate of interest which cause such ruin and destruction of profits	481-7
Table of deposits, rate of discount, note reserves, bills discounted, and other securities in banking department, 1845-71	482-4
The rate raised by the Bank to double the amount required to bring in one million of bullion, because half comes in in notes	485-6
Uncertainty of our money market, as illustrated in the rates of 1857, 1866, and 1872	486
Question of the reserve as a measure of safety to the Bank	487
The real reserve of the Bank at times not larger than that of other banks	488-91
Form of the Bank accounts as prescribed by Parliament	489
The Bank capital and rest not to be separated from the other liabilities	490
The bullion in the issue department not to be considered as a cash reserve	490
Cases illustrating the folly of the statement that the fifteen million issue of notes is equal to gold, and showing that it is a merely nominal reserve	492-5
The supposed direct pecuniary profit to the Bank from the issue shown to be illusory, and the loss equal to 100,000 <i>l.</i> per annum (the yield being only 2½ on a supposed investment at 3 per cent.)	495-501
Table of interest earned by the Bank on notes above bullion held 1845-71	499
Table of annual charge in the issue, annual interest and profit and loss, 1845-71	500
The extra profits of the Bank in times of severe panic to be deducted from the above statement of loss	502
Indirect advantages supposed to be derived by the Bank from the national debt management, the Government account, lost notes, and forgotten deposits	502-3
Effects of a continued large fiduciary note issue in fostering speculation	504-5
Objections to the share of profit on the issues received by the State	506-7
Necessity for a more complete publication of the transactions of the banking department	507
Suggestions for an improved system of issue	509
Pleas on which issues of bank notes or paper money are usually made, and classification of notes in accordance with them	509-10
Serious effects of a depreciated issue on the prosperity of a country, and the same in a minor degree of a fiduciary issue beyond a bullion basis	510-11
The expense of bank note issues ten times as great as the wear and tear on coin which they are supposed to save	511
Mode of issue of bullion notes on the plea of convenience, so as to cover their expense	512

	PAGE
SEYD (Ernest). <i>Critique on the Operation of the Bank Act—contd.</i>	
Illustrations of the theory of a temporary increase or reduction of fiduciary issues in connection with a neutral rate of interest	512-22
Proposal of a new, regular, and self-acting scheme of increase or reduction of issue, in proportion to rate of interest	514-18
Comparisons showing the correspondence of the half rate system, with the actual fiduciary circulation at different periods	519-20
Tables of the allowable increase of the circulation at different rates of interest	521
Table of the average bullion and fiduciary circulation, 1845-71, compared with what would have been allowed by the system proposed, at 2, 2½, and 3 per cent. normal rates	522-32
A more continuous practical connection with the business of country and general mercantile credit required by the Bank	535
Proposed alterations in the State's share of profit, in accordance with the profits made	536-8
Summary of the effects of the proposed self-acting plan, if carried out, in determining the amount of bullion, checking export of ditto, and determining a normal rate of interest	539
Notice of other suggestions which have been made, regarding the holding of foreign securities by the Bank, and the increase of the fiduciary issue	539
SHIPPING. <i>Shipbuilding in the United Kingdom, 1871</i> [from the "Times"]	149
danger of too much special legislation on	230
(British), vessels and tonnage.	
foreign trade, United Kingdom :	
Jan.-Dec., 1869-71	164
Jan.-March, 1870-72	258
Jan.-June, 1870-72	410
Jan.-Sept., „	558
tonnage statistics of, 1860-70 (see <i>Glover</i>)	218
tonnage of British and foreign in the foreign trade, of nationalities in our trade, steamers, sailing vessels, &c., 1860-70	222-9
excessive increase of iron steam vessels, and decrease of wooden, in our, since 1860	220
British, its profitable employment in the Abyssinian war	219
large proportion of British in our colonial trade	114
increase of foreign tonnage in our trade since repeal of Navigation Laws	218
merchant, touching at St. Helena, 1869-71	329-30
American, great decrease of, in our carrying trade, caused by the civil war	219
SHIPWRECKS, losses of shipping posted on "Lloyd's Loss Book," 1871, (see <i>Jeula</i>)	330-33
SICKNESS and Death, large amount of, among prisoners in India	66-68
among prisoners in Bengal	84-93
SILVER, exports of, to the East	132
SMITH (Goldwin), his argument that our trade with the Colonies would be increased by their independence, controverted	111-12
SOCIETIES. <i>House Accommodation for Learned Societies</i>	373
Sir John Lubbock's address in the House of Commons relative to the vote of 12,000 <i>l.</i> for certain learned societies, not being in any way a grant in their aid; and suggestions for assistance to them in the shape of sites and house accommodation	373-5
SOLDIERS, improvements in enlistment of	1-2
and Seamen, comparative health of (see <i>Balfour</i>)	1
STATISTICAL CONGRESS. See <i>Congress</i> .	
STATISTICAL SOCIETY (The).	
anniversary meeting and report, thirty-eighth, June, 1872	265
abstract of receipts and payments for 1871	270
list of papers read, 1871-72	266
papers to be read, 1872-73	—
notice of deceased Fellows during 1872	{ 267
inaugural address of the President (William Farr, M.D.), November, 1872 (see <i>Farr</i>)	{ 428-30
November, 1872 (see <i>Farr</i>)	417

	PAGE
STATISTICS, notice of important writers on	417
prospect of their spread in Russia, China, &c.	424
(official) of trade. See <i>Trade</i> .	
SUEZ CANAL, statistics relating to the traffic through the (see <i>Jeula</i>) .	327-8
its results on the India and China trade	146
SYKES (Colonel), obituary memoir of	429
TEA. <i>The Consumption of Tea</i> [from the "Pall Mall Gazette"] .	243
Analysis of the customs' returns from 1801 to 1871, showing rise of consumption in inverse ratio with reductions in duty	243
TELEGRAMS, INTERNATIONAL, 90 per cent. connected with commerce .	302
TELEGRAPHS, arguments in favour of the Post Office management of .	276-8
MARINE, account of, cables laid, loss of cables, and causes of the injury, &c.	313-21
— list of cables, their length, weight, and sea depth	322-6
ATLANTIC, earnings, duration of tariffs, number of cables in action and projected, &c.	297-9
INDIAN, traffic and tariffs	300-301
TELEGRAPHY, statistics of (see <i>Anderson</i>)	272
TOBACCO, consumption of, in the United Kingdom, taxes and revenue from, 1801-70 (see <i>Axon</i>)	334
adulteration of, great extent of	337
TONNAGE. See <i>Shipping</i> .	
TRADE of United Kingdom, exports and imports, 1869-72	{ 161, 255
computed real value of exports, 1866-70	{ 406, 555
see <i>Exports, Imports</i> .	407
TRADE (OFFICIAL), and navigation statistics (see <i>Bourne</i>)	196
— methods adopted for collecting, since 1697 to 1870	198-200
— nature of records and publications from which obtained, and recent alterations in the system	209-14
— ditto, summary of ditto	215-16
TRADE, <i>table</i> of imports, exports, duties, &c., 1851, 1861, 1871	217
illustrative examples, showing how it "follows the flag"	112
foreign, of Russia, 1819-48	363-5
TULLOCH (Sir A. M.) Paper on the Health of Seamen and Soldiers, referred to	1
UNITED STATES. See <i>America</i> .	
wages of women in (see <i>Wages</i>)	236
VENEREAL DISEASES among soldiers and seamen	7, 14
VESSELS. See <i>Shipping</i> .	
WAGES, average rates of, in Melbourne, Australia	387
average, and classes of work in demand, in Canada	388
<i>Women's Wages in the United States</i> [from the "Manchester Guardian"]	236
Domestic service: hard lot of little "cash" girls in shops	236
Average earnings in various vocations, wholesale and retail, shirtmaking, &c. Questions connected with the employment of women, and obstacles in the way of their success	236-7 237-8
WALES (PRINCE OF), address of the Council to the, on his recovery .	267
WAR, Franco-German	127
WEATHER. See <i>Meteorological Tables</i> .	

	PAGE
WEIGHTS AND MEASURES, comparison of Russian, English, and metric systems	344
WHEAT, average prices of, 1863-71	131
WITCH-FINDERS, belief in, among the Coles of Bengal	63-4
WOMEN. Wages of, in the United States (see <i>Wages</i>)	236
WRECKS. See <i>Shipwrecks</i> .	

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1847	Alexander, G. W., 30, <i>Lombard-street, E.C.</i>
1872	Alexander, Robert H., 30, <i>Lombard-street, E.C.</i>
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1855	Arnott, Neil, M.D., 2, <i>Cumberland-terrace, Regent's-park, N.W.</i>

Year of Election.	
1854	Ashworth, Henry, <i>The Oaks, Bolton, Lancashire.</i>
1871	Atkinson, G. W., <i>Barnsley.</i>
1870	Avery, Thomas, <i>Edgbaston, Birmingham.</i>
1871	Axon, William, E.A., <i>4, Victoria-terrace, Rusholme, Manchester.</i>
1872	*Babbage, Lieut.-Col. Henry P., <i>Bromley, Kent.</i>
1872	*Backhouse, Edmund, M.P., <i>Reform Club, S.W.</i>
1864	Bagehot, Walter, M.A., <i>340, Strand, W.C.</i>
1855	Bailey, Arthur Hutcheson, <i>7, Royal Exchange, E.C.</i>
1858	Baines, Edward, M.P., <i>St. Ann's-hill, Burley, Leeds.</i>
1848	Balfour, Major-Gen. Sir George, M.P., K.C.B., <i>6, Cleveland-gardens, Bayswater, S.W.</i>
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1865	Bannerman, John Barclay, <i>53, Bedford-square, W.C.</i>
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1869	*Beverley, Henry, <i>Clent Grange, near Stourbridge.</i>
1869	Beyts, Hon. Henry Nicholas Duverger, <i>Port Louis, Mauritius.</i>
1866	Bikélas, Démétris, <i>19, Old Broad-street, E.C.</i>

Year of Election.	
1836	Blake, William John, F.R.S., 25, <i>Portland-place, W.</i>
1864	Blakely, Edward T., <i>Statistical Department, Board of Trade, Whitehall-gardens, S.W.</i>
1844	Blyth, James, 24, <i>Hyde-park-gardens, W.</i>
1860	Bohn, Henry G., 18, <i>Henrietta-street, Covent Garden, W.C.</i>
1854	Boult, Swinton, 1, <i>Dale-street, Liverpool.</i>
1871	Bourne, Stephen, <i>H.M. Custom House, E.C.</i>
1860	Bovill, William John, 22, <i>James-street, Buckingham-gate, S.W.</i>
1851	Bowman, John, 9, <i>King William-street, City, E.C.</i>
1839	Bracebridge, Charles Holt, <i>Athenæum Club, S.W.; and Atherstone-hall, Warwickshire.</i>
1867	Bradley, Lonsdale, <i>Priory House, Richmond, Yorkshire.</i>
1855	Brand, Right Hon. Henry Bouverie William, M.P., <i>Speaker's Court, House of Commons.</i>
1867	Bremner, John, <i>Manchester.</i>
1856	Briggs, General John, F.R.S., 2, <i>Tenterden-street, Hanover-square, W.C.</i>
1844	Bristow, Alfred Rhodes, <i>The Admiralty, Somerset House, W.C.</i>
1872	Brown, J. B., 90, <i>Cannon-street, E.C.</i>
1837	*BROWN, SAMUEL, 11, <i>Lombard-street, E.C.</i>
1866	Brown, Thomas, jun., 135, <i>Buchanan-street, Glasgow.</i>
1868	Bryant, William Charles, 11, <i>Sydney-place, Onslow-square, S.W.</i>
1872	Buckley, Nathaniel, M.P., <i>Reform Club, S.W.</i>
1865	Bunce, John Thackray, " <i>Daily Post</i> " <i>Office, Birmingham.</i>
1863	Burnett, Alexander Smith, <i>Barbados, West Indies.</i>
1872	Burns, Rev. Dawson, M.A., 52, <i>Parliament-street, S.W.</i>
1868	Burton, Samuel Warren, <i>The Hermitage, Tunbridge, Kent.</i>
1872	Brind, F., <i>Bickley, Kent.</i>
1871	Byrne, William Alfred, <i>Ghazepore, North West Provinces, India.</i>

Year of
Election.

- 1857 CAIRD, JAMES,
3, *St. James's-square, S.W.*; and *Cassencarie, Kirk-
cudbrightshire.*
- 1871 Campbell, Robert, M.A.,
16, *Old-buildings, Lincoln's Inn, W.C.*
- 1862 Cape, George A.,
8, *Old Jewry, E.C.*
- 1867 Carrias, Victoriano,
28, *Davies-street, Berkeley-square, W.*
- 1872 Carrilon, J. Wilson,
Wormhill, Buxton.
- 1862 Carter, Henry Bonham,
11, *Lombard-street, E.C.*
- 1848 Carter, John Bonham, M.P.,
25, *Ashley-place, Victoria-street, S.W.*
- 1858 Chadwick, David, M.P.,
27, *Belsize-park, N.W.*
- 1834 Chadwick, Edwin, C.B.,
Park Cottage, East Sheen, Mortlake.
- 1869 Chadwick, John Oldfield,
65, *Moorgate-street, E.C.*
- 1863 Charlton, W. H.,
Hesleyside, near Hexham, Northumberland.
- 1862 Cheetham, John,
Stalybridge.
- 1851 *Cheshire, Edward,
26, *Old Broad-street, E.C.*; and *Conservative Club.*
- 1853 Chisholm, David,
64, *Princes-street, Edinburgh.*
- 1862 Christie, Richard Copley, M.A.,
2, *St. James's-square, Manchester.*
- 1869 CHUBB, HAMMOND, B.A.,
Bickley, Kent.
- 1856 Clark, Sir John Forbes, Bart.,
38, *Cornwall-gardens, W.*
- 1849 Clark, Gordon Wyatt,
72, *Great Tower-street, E.C.*; and *Chessington, Surrey.*
- 1856 *CLARKE, HYDE, D.C.L.,
32, *St. George's-square, S.W.*
- 1871 Clarke, Ebenezer, jun.,
52, *Cannon-street, E.C.*
- 1850 Cleghorn, John,
3, *Spring-gardens, S.W.*
- 1853 *Cleveland, His Grace the Duke of,
17, *St. James's-square, S.W.*
- 1845 Clirehugh, William Palin,
158, *Leadenhall-street, E.C.*
- 1838 Cobb, Timothy Rhodes,
Banbury.

Year of Election.	
1859	Colebrooke, Sir Thomas Edward, Bart., M.P., 37, <i>South-street, W.</i>
1867	Coles, John, 39, <i>Throgmorton-street, E.C.</i>
1843	Colman, Jeremiah James, <i>Carrow House, Norwich.</i>
1867	*Copperthwaite, Charles William, <i>New Malton, Yorkshire.</i>
1866	Cotton, Francis Lovett, <i>Baltic Chambers, 108, Bishopsgate-street Within, E.C.</i>
1866	Cotton, William, <i>National Provincial Bank, Exeter.</i>
1862	COURTNEY, PROF. LEONARD HENRY, <i>Chapel Staircase, Lincoln's-inn, W.C.</i>
1857	*Cowper-Temple, Rt. Hon. William Francis, M.P., 17, <i>Curzon-street, May-fair, W.</i>
1870	Craik, George Lillie, 16, <i>Bedford-street, Strand, W.C.</i>
1872	Crellin, Philip, 15, <i>Coleman-street, E.C.</i>
1862	Cudlip, Joseph Stevens, <i>Plymouth.</i>
1848	Cutcliffe, George, 13, <i>St. James's-square, S.W.</i>
1853	Dalhousie, The Right Hon. the Earl of, K.T., <i>Brookes's Club, S.W.</i>
1869	Dalyell, R. Anstruther, <i>Civil Service, Madras.</i>
1869	Davies, James Mair, 135, <i>Buchanan-street, Glasgow</i>
1864	Davis, W. H.,
1855	*Dawbarn, William, <i>Elmswood Hall, Aigburth, Liverpool.</i>
1855	*DERBY, THE RIGHT HONOURABLE EARL OF (<i>Vice-President</i>), 23, <i>St. James's-square; and Knowsley, Prescot, Lancashire.</i>
1866	*Dilke, Sir Charles Wentworth, Bart., M.P., LL.M., 76, <i>Sloane-street, S.W.</i>
1841	*Dorin, J. A., <i>Calcutta.</i>
1869	Dornbusch, George, <i>South Sea House, Threadneedle-street, E.C.</i>
1867	Dowleas, Baron Albert Mirabeau, <i>India Board, Calcutta.</i>
1872	Droop, Henry Richmond, 1a, <i>New-square, Lincoln's-inn, W.C.</i>
1871	Duncan, James, 5, <i>Highbury-hill, N.</i>

Year of Election.	
1870	Duprat, Le Vicomte, 46, <i>Palace-gardens-terrace, Kensington, W.</i>
1867	Earle, Ralph A., <i>Carlton Club, S.W.; and 27, Park-street, W.</i>
1836	Edmonds, Thomas Rowe, B.A., 22, <i>Brunswick-gardens, Kensington, W.</i>
1869	Edmonds, William, <i>Airedale Villa, Elm-grove, Southsea.</i>
1872	Elliott, George, M.P., <i>Park-street, Park-lane, W.</i>
1842	Elliott, John Hawkins, 4, <i>Martin's-lane, City, E.C.</i>
1870	Ellis, S. W., <i>High House, Thornwaite, near Ripley, Yorkshire.</i>
1856	Estcourt, Rt. Hon. Thomas Henry Sutton Sotheron, D.C.L., <i>Estcourt, Tetbury.</i>
1862	Evens, John Henry, 9, <i>Finsbury-place, E.C.</i>
1842	*Everest, Rev. Robert, <i>Westwick House, Ascot.</i>
1834	Eversley, The Right Honourable Viscount, 114, <i>Eaton-square, S.W.; and Heckfield-place, Winchfield, Hants.</i>
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1868	Farrell, John Douglas, 1, <i>Burlington-gardens, Old Bond-street, W.</i>
1872	Feigan, John Albert, <i>Glen May, Fallowfield, Lancashire.</i>
1836	*Felkin, William, <i>Park, Nottingham.</i>
1864	Fellows, Frank P., 8, <i>The Green, Hampstead, N.W.</i>
1834	Finch, John, <i>Heathside, Tunbridge Wells.</i>
1865	FitzWilliam, William Shelford, 28, <i>Ovington-square, S.W.</i>
1841	Fortescue, The Right Honourable Earl, <i>Castle-hill, South Moulton, Devonshire.</i>
1871	Forwood, William Bower, <i>Ramlet, Blundellsands, Liverpool.</i>
1868	Fowler, William, M.P., 30, <i>Lombard-street, E.C.</i>
1857	Fox, Joseph John, <i>Lordship-road, Stoke Newington, N.</i>

Year of Election.	
1844	*Freeland, Humphrey William, <i>Athenæum Club, S.W.; and Chichester.</i>
1872	Freeman, Francis, <i>63, Pall Mall, S.W.</i>
1852	Galsworthy, Edwin Henry, <i>5, York-terrace, Regent's Park, N.W.</i>
1860	GALTON, FRANCIS, F.R.S., <i>42, Rutland-gate, S.W.</i>
1872	Gastrell, Colonel J. E., <i>Revenue Survey Department, Bengal Staff Corps.</i>
1865	*GIBBONS, SIR S. J., BART., <i>13, Upper Bedford-place, Russell-square, W.C.</i>
1872	Gibb, Thomas Eccleston, <i>37, Torriano-avenue, N.W.</i>
1871	Gibbs, George Sleight, <i>Darlington.</i>
1867	GIFFEN, ROBERT, <i>44, Pembroke-road, Kensington, W.</i>
1834	GLADSTONE, RIGHT HON. WILLIAM EWART, D.C.L., M.P. (<i>Vice-President</i>), <i>11, Carlton House-terrace, S.W.</i>
1860	Glover, John, <i>22, Great St. Helen's, Bishopsgate-street, E.C.</i>
1869	Goldney, Gabriel, M.P., <i>Beechfield House, near Chippenham; and Conservative Club, S.W.</i>
1850	Goldsmid, Sir Francis Henry, Bart., M.P., Q.C., <i>St. John's Lodge, Regent's-park, N.W.</i>
1868	Göschén, Right Hon. George Joachim, M.P., <i>66, Mount-street, W.</i>
1855	*Gosset, John Jackson, <i>Thames Ditton, Surrey.</i>
1870	Gottlieb, Felix Henry, <i>4, Garden-court, Temple, E.C.</i>
1853	Gover, William Sutton, <i>4, Queen-street-place, Southwark Bridge, E.C.</i>
1847	Gray, Thomas, <i>34, Fenchurch-street, E.C.</i>
1834	Grey, Right Hon. Sir George, Bart., M.P., G.C.B., <i>Fallodon, Chathill, Northumberland.</i>
1868	Griffith, Edward Clifton, <i>48, Pall Mall, S.W.</i>
1841	Griffith, John, <i>6, Hanover-terrace, Regent's-park, N.W.</i>
1841	Griffith, Richard Clewin, <i>20, Gower-street, W.C.</i>
1872	Griffiths, John George, <i>4, Lothbury, E.C.</i>
1865	Gurney, Daniel, <i>North Runcton, near King's Lynn, Norfolk.</i>

Year of
Election

- 1839 GUY, WILLIAM AUGUSTUS, M.B., F.R.S. (*Vice President*),
26, *Gordon-street, Gordon-square, W.C.*
- 1867 Haddon, Frederick William,
“*Melbourne Argus*” *Office, Melbourne.*
- 1872 Haliburton, R. G.,
The Arts Club, 17, Hanover-square, N.
- 1871 Hall, Edward Hepple,
Brighton.
- 1869 Hall, James Macalester,
Woodside-crescent, Glasgow.
- 1860 HAMILTON, ARCHIBALD,
South Barrow, Bromley, Kent.
- 1841 Hamilton, Terrick,
21, *Park-street, Grosvenor-square, W.*
- 1855 HAMMICK, JAMES THOMAS (*Treasurer*),
General Register Office, Somerset House, W.C.
- 1869 Hancock, William,
33, *Cornhill, E.C.*
- 1869 Hancock, William Neilson, LL.D.,
64, *Upper Gardner-street, Dublin.*
- 1837 *Hankey, John Alexander,
Balcombe-place, Cuckfield, Sussex.
- 1861 Hannyngton, Major-General John Caulfield,
India Office, S.W.
- 1871 Harcourt, William Vernon, Q.C., M.P.,
14, *Stratford-place, W.*
- 1871 Hare, Francis Augustus Cox,
Market-street, Manchester.
- 1866 Harper, Frederick H.,
18, *Coleman-street, E.C.*
- 1868 Harris, David,
13, *Queen-street, Edinburgh.*
- 1868 Harrison, John, jun.,
Darlington.
- 1870 Hartley, Fountain John,
Laurel-house, Graham-road, Dalston, N.E.
- 1834 HARROWBY, THE RIGHT. HON. THE EARL OF, K.G., F.R.S.
(*Vice-President*),
39, *Grosvenor-square, W.*
- 1862 Harvey, Arthur,
Toronto, Ontario, Canada.
- 1834 Hawkins, Francis Bisset, M.D., F.R.S.,
146, *Harley-street, W.*
- 1834 Hawkins, John Heywood, M.A., F.R.S.,
Reform Club, S.W.
- 1871 Head, Jeremiah,
Coatham, Redcar, Yorkshire.
- 1870 Hefford, G. V.,
Rugby.

Year of Election.	
1860	Helder, Stewart, 2, <i>Broad Sanctuary, S.W.</i>
1865	Hendriks, Augustus, 7, <i>Cornhill, E.C.</i>
1855	*HENDRIKS, FREDERICK, 1, <i>King William-street, E.C.</i>
1858	Herapath, Spencer, 19, <i>Sheffield-terrace, Campden-hill, Kensington, W.</i>
1870	Hewitt, John, <i>Gand's Ship Building and Engineering Company, Hedon-road, Hull.</i>
1834	*HEYWOOD, JAMES, M.A., F.R.S. (<i>Trustee and Vice-President</i>), <i>Athenæum Club, S.W.; and 26, Palace-gardens, Kensington, W.</i>
1869	Hickson, Joseph, <i>Montreal.</i>
1872	Hill, Matthew Berkely, M.B., 14, <i>Weymouth-street, W.</i>
1864	Hill, Pearson, <i>General Post Office, E.C.</i>
1834	Hill, Sir Rowland, K.C.B., D.C.L., F.R.S., <i>Hampstead.</i>
1859	Hincks, Francis, His Excellency Sir, <i>George Town, Demerara.</i>
1870	*HOARE, HENRY, 9, <i>St. James's-square, S.W.</i>
1858	Hobson, Jesse, <i>Grove House, Shacklewell, E.</i>
1834	*Hodge, William Barwick, 5, <i>Whitehall, S.W.</i>
1867	Hodgson, W. B., LL.D., <i>Seamoor House, Bournemouth.</i>
1871	Hooper, Angus Cameron, <i>Montreal, Canada.</i>
1868	Hope, William, <i>Parsloes, Barking.</i>
1855	HOUGHTON, THE RIGHT HONOURABLE LORD (<i>Vice-President</i>), <i>Fryston Hall, Ferrybridge, Yorkshire.</i>
1871	Hovell-Thurlow, Thomas John, <i>Dunplail, Forres</i>
1856	Howard, Sir Ralph, Bart., 5, <i>Belgrave Mansions, Grosvenor-gardens.</i>
1871	Howis, William,
1871	Hoyer, Henry, <i>Bromley, Kent.</i>
1872	Hubbard, Egerton, 24, <i>Princes-gate, S.W.</i>
1853	*Hubbard, John Gellibrand, <i>Bank of England, E.C.</i>

Year of Election.	
1864	Hudson, Thomas, <i>Hereford House, Acton.</i>
1871	Hughes, Albert William, <i>Kurrachee, Bombay, India.</i>
1872	Humphreys, George, <i>79, Pall Mall, S.W.</i>
1857	Hurst, George, <i>King's Brook House, St. Mary's, Bedford.</i>
1869	Imrie, Peter,
1866	Ince, Henry Bret, <i>2, Old-square, W.C.</i>
1869	Ingall, Samuel, <i>Kent-end, Forest-hill, Kent.</i>
1869	Inglis, Cornelius, M.D., <i>Athenæum Club, S.W.</i>
1839	Irving, John, <i>94, Eaton-place, S.W.</i>
1869	Isaacs, Henry A., <i>Hillworth Lodge, Lower Tulse-hill, Brixton, S.W.</i>
1864	*Ivey, George Pearse, <i>Adelaide-chambers, Swansea.</i>
1872	Janson, Frederick H., <i>Oak Bank, Chislehurst.</i>
1851	*Jellicoe, Charles, <i>12, Cavendish-place, W.</i>
1862	Jeula, Henry, <i>29, Gracechurch-street, E.C.</i>
1864	*Jevons, Professor William Stanley, M.A., <i>Parsonage-road, Withington, Manchester.</i>
1871	Johnson, Edmund, <i>3, Northwick Terrace, Maida-hill, N.W.</i>
1872	Johnston, Francis J., <i>Lamas, Chislehurst.</i>
1858	JOURDAN, FRANCIS, <i>Avenue House, Hampstead, N.W.</i>
1862	Kain, George James, <i>69, Chancery-lane, W.C.</i>
1867	Kelly, Edward Robert, A.M., <i>Cressy House, New-road, Shepherd's-bush, W.</i>
1864	Kennedy, Lieut.-Col. John Pitt, <i>66, St. George's-square, S.W.</i>
1868	Kennedy, Peter, <i>13, Cornwall-terrace, Regent's-park, N.W.</i>
1870	Kennedy, William R., <i>3, Chapel-street West, Mayfair, W.</i>
1852	Kimberley, The Right Honourable Lord, <i>48, Bryanston-square, W.</i>

Year of Election.	
1834	*Knight, Charles, 90, <i>Fleet-street, E.C.</i>
1872	Knight, John P., <i>London, Brighton, and South Coast Railway, London Bridge, E.C.</i>
1865	Knight, Robert, " <i>Times</i> " of India Office, <i>Bombay.</i>
1865	Kühner, Henry, 39, <i>Lombard-street, E.C.</i>
1869	Kyshe, John, <i>Mauritius.</i>
1863	Lambert, John, <i>Local Government Board, Whitehall, S.W.</i>
1869	Lamport, Charles, <i>Plasmawr, Penmaen Mawr, North Wales.</i>
1844	*Larcom, Major-General, Sir T. A., Bart., K.C.B., <i>Heathfield, Fareham, Hants.</i>
1869	Lawson, John Ancram, B.A.,
1834	*Leaf, William, <i>Old Change, Cheapside, E.C.</i>
1847	Lee, Thomas, <i>Royal Institution, Albemarle-street, W.</i>
1861	Legg, R. D., <i>Southampton.</i>
1834	Le Marchant, Sir Denis, Bart., <i>Chobham, Surrey.</i>
1870	Leitch, John Muir, 18, <i>King William-street, E.C.</i>
1851	LEVI, PROFESSOR LEONE, LL.D., 10, <i>Farrar's-buildings, Temple, E.C.</i> ; and 20, <i>Thornhill-crescent, Caledonian-road, N.</i>
1867	Lewis, Charles Edward, 8, <i>Old Jewry, E.C.</i>
1853	Lewis, Charles Terrell, <i>West of England Assurance, Exeter.</i>
1862	Lewis, Robert, 1, <i>Bartholomew-lane, E.C.</i>
1862	Leyland, John E., <i>Essex-villas, Phillimore-gardens, W.</i>
1868	Lissa, Joseph J. Cohen de, <i>Port Louis, Mauritius.</i>
1845	*Lister, William, 11, <i>Somers'-place, Hyde-park, W.</i>
1834	Lloyd, John Horatio, 10, <i>Lancaster-gate, Hyde-park, W.</i>
1864	Logan, D., <i>Care of Messrs. Richardson, 23, Cornhill, E.C.</i>

Year of Election.	
1869	Lopes, Sir Lopes Massey, Bart., M.P., <i>Maristow House, Plymouth; 28, Grosvenor Gardens, S.W.; and Carlton Club.</i>
1834	Lovelace, The Right Honourable the Earl of, F.R.S., <i>East Horsley-park, Ripley, Surrey.</i>
1865	LUBBOCK, SIR JOHN, BART., M.P., F.R.S. (<i>Trustee</i>), <i>High Elms, Farnborough, Kent.</i>
1843	LUMLEY, WILLIAM GOLDEN, LL.M., Q.C. (<i>Vice-President</i>), <i>Local Government Board, Whitehall, S.W.</i>
1834	Lushington, Right Hon. Stephen, D.C.L., <i>18, Eaton-place, S.W.</i>
1871	Lutchmeepathy Naidoo, Garoo, C. P., <i>Madras, India.</i>
1864	MacClelland, James, <i>32, Pembridge-square, W.</i>
1870	Maclagan, David, <i>22, George-street, Edinburgh.</i>
1868	Macdonald, James, <i>7, Lothbury, E.C.</i>
1856	M'Gillivray, Donald, <i>39A, Moorgate-street, E.C.</i>
1871	Macdonell, James, <i>3, Euston-square, N.</i>
1872	Macdonell, John, <i>3, Euston-square, N.</i>
1834	Mackenzie, Right Hon. Holt, <i>Athenæum Club, S.W.</i>
1871	Mackenzie, Alfred Westwood, <i>Brook's Wharf, Upper Thames-street, E.C.</i>
1871	Mackeson, Charles, <i>The Admiralty, Somerset House, W.C.</i>
1867	McClellan, Frank, <i>Pembury-road, Tunbridge Wells.</i>
1839	McClellan, John Robinson, <i>23, Great George-street, Westminster, S.W.</i>
1866	McKenna, W.C., <i>6, Westminster Chambers, Victoria-street, S.W.</i>
1871	Mackay, James Macgregor, <i>32, Brunswick-square, Brighton.</i>
1863	Maclure, J. W., <i>Fallowfield, near Manchester; and Conservative Club S.W.</i>
1871	Malgarini, Frederick Lewis, <i>7, Whitehall-place, S.W.</i>
1852	Mann, Horace, <i>Civil Service Commission, Cannon-row, Westminster, S.W.</i>
1872	Manning, The Most Rev. Archbishop, <i>8, York-place, Portman-square, W.</i>
1860	Marsh, Matthew Henry, <i>Bamridge, near Andover.</i>

Year of Ele tion.	
1834	Marshall, James Garth, <i>Headingley-house, Leeds; and Monk Coniston, Ambleside.</i>
1865	Martin, Frederick, <i>5, Fortess-terrace, N.W.</i>
1840	Martin, Sir James Ranald, C.B., F.R.S., <i>37, Upper Brook-street, W.</i>
1867	Martin, James, <i>18, New Bridge-street, E.C.</i>
1872	*Martin, Richard Biddulph, M.A., <i>68, Lombard-street, E.C.</i>
1870	Maxse, Captain R. N., <i>67, Cromwell-road, South Kensington.</i>
1853	*Meikle, James, <i>6, St. Andrew's-square, Edinburgh.</i>
1861	Messent, John, <i>429, West Strand, W.C.</i>
1872	Michell, Robert, <i>India Office, S.W.</i>
1864	Minett, John Thomas, <i>1, Adelaide-place, E.C.</i>
1842	Moffatt, George, <i>103, Eaton-square, S.W.</i>
1872	Morgan, Octavius Vaughan <i>Patent Plumbago Works, Battersea, S.W.</i>
1847	*MOUAT, FREDERICK JOHN, M.D. (<i>Honorary Secretary</i>), <i>12, Durham-villas, Kensington, W.</i>
1858	Muir, Thomas, <i>24, York-terrace, Regent's-park, N.W.</i>
1850	Murchison, John Henry, <i>8, Austin Friars, E.C.</i>
1868	Murrow, Yorick James, <i>12, Tavistock-crescent, Westbourne-park, W.</i>
1865	Nasmith, David, <i>4, Garden-court, Temple, E.C.</i>
1854	Neild, Alfred, <i>Mayfield, Manchester.</i>
1869	Neison, Francis Gustavius Paulus, jun., <i>6, Great James-street, Bedford-row, W.C.</i>
1862	Newbatt, Benjamin, <i>13, St. James's-square, S.W.</i>
1847	NEWMARCH, WILLIAM, F.R.S. (<i>Trustee and Vice President</i>), <i>67, Lombard-street, and Beech Holme, Nightingale-lane, Clapham-common, S.</i>
1869	Newmarch, William Thomas, A.A., Oxon, <i>Quayside, Newcastle-on-Tyne.</i>
1858	Nightingale, Miss Florence, <i>35, South-street, W.</i>
1871	*Noble, Benjamin, <i>North-Eastern Bank, Newcastle-on-Tyne.</i>

Year of
Election

- 1870 Noble, John,
5, *Queen-square, Westminster, S.W.*
- 1834 Norman, George W.,
Bromley, Kent, S.E.
- 1869 Norwood, Charles Morgan, M.P.,
21, *Billiter-street, E.C.*
- 1862 Ogbourne, Charles Henry,
29, *Dalhousie-square, Calcutta.*
- 1834 *OVERSTONE, THE RIGHT HONOURABLE LORD (*Vice-President*),
2, *Carlton-gardens, S.W.*
- 1841 PAKINGTON, RIGHT HON. SIR JOHN SOMERSET, BART., M.P.,
G.C.B. (*Vice-President*),
9, *Eaton-square, S.W.*; and *Westwood Park, Droitwich, Worcestershire.*
- 1866 PALGRAVE, ROBERT HARRY INGLIS,
11, *Britannia-terrace, Yarmouth, Norfolk.*
- 1855 Pare, William,
Chatfield House, Putney, S.W.
- 1870 Parker, Josiah Samuel,
5, *Featherstone-buildings, Holborn, W.C.*
- 1869 PATTERSON, R.H.,
21, *John-street, Adelphi, W.C.*
- 1870 Pattison, William Pollard,
52, *Brook-street, Grosvenor-square, W.*
- 1837 *Pearson, Professor,
13, *Beaufort-gardens, Brompton-road, S.W.*
- 1834 Pease, Joseph, M.P.,
Southend, Darlington.
- 1871 Pennington, Frederick,
17, *Hyde Park-terrace, W.*
- 1834 Philips, Mark,
Welcombe, Stratford-on-Avon.
- 1859 Phillips, Henry James,
4, *Ludgate-hill, E.C.*
- 1835 *Phillips, Sir George Richard, Bart.,
22, *Hill-street, Berkeley-square, W.*
- 1871 Pickering, John,
Leeds.
- 1838 *Pinckard, George Henry,
12, *Grove-road, St. John's-wood, N.W.*
- 1867 Pleuer, Ernest von,
18, *Belgrave-square, S.W.*
- 1861 Plowden, W. C.,
Board of Revenue, Allahabad, India.
- 1869 Pochin, Henry Davis,
Barn Elms, Barnes, S.W.
- 1860 Potter, Edmund, M.P.,
Camfield-place, Hatfield.

Year of Election.	
1871	Power, Edward, 45, <i>Belsize-park, N.W.</i>
1867	Pratt, Robert Lindsay, <i>Darlington.</i>
1849	Presant, John, 13, <i>St. James's-square, S.W.</i>
1868	Price, William R., 6, <i>Amersham Villas, Lewisham High Road, S.E.</i>
1870	Prichard, Iltudus Thomas, 4, <i>Garden-court, Temple, E.C.</i>
1871	Puleston, John Henry, 3, <i>Palace-gate, Kensington, W.</i>
1837	*PURDY, FREDERICK (<i>Honorary Secretary</i>), <i>Local Government Board, Whitehall, S.W. : and 35,</i> <i>Victoria-road, Kensington, W.</i>
1868	Purdy, William Frederick, <i>Local Government Board, Whitehall, S.W.</i>
1872	Rabino, Joseph, <i>Credit Lyonnais, 29, Lombard-street, E.C.</i>
1858	*Radstock, The Right Honourable Lord, 30, <i>Bryanstone-square, W.</i>
1864	*Raleigh, Samuel, 9, <i>St. Andrew Square, Edinburgh.</i>
1860	Ramsay, Alexander Gillespie, <i>Canada Life Assurance, Hamilton, Canada West.</i>
1865	Ratcliff, Charles, <i>Athenæum Club, S.W. ; and Wyddrington, Birmingham.</i>
1859	Rathbone, P. H., <i>Greenbank-cottage, Liverpool.</i>
1870	Rawlinson, Robert, C.B., 11, <i>Boltons, West Brompton, S.W.</i>
1835	Rawson, Rawson William, C.B., His Excellency, <i>Barbadoes.</i>
1856	Redgrave, Alexander, <i>Home Office, S.W.</i>
1834	*Redgrave, Samuel, 17, <i>Hyde-park Gate South, Kensington, W.</i>
1870	Rees, William, 4, <i>Cavendish-place, All Saints, Manchester.</i>
1867	Reid, Herbert Lloyd, 3, <i>Eland-terrace, Lavender-hill, S.W.</i>
1862	Reynolds, Frederick, <i>Education Depart., Privy Council Office, Whitehall, S.W.</i>
1870	Rich, Elihu, <i>Alpha Villa, Highgate Archway, N.</i>
1871	Rivett-Carnac, Harry, <i>Calcutta, India.</i>
1865	Robarts, Charles H., <i>All Souls' College, Oxford.</i>

Year of Election.	
1851	Robertson, Alexander, 112, <i>Bishopsgate-street Within, E.C.</i>
1868	Robinson, W., <i>Civil Service, Madras.</i>
1859	Rogers, Professor J. E. Thorold, M.A., 8, <i>Beaumont-street, Oxford.</i>
1834	*Ross, David, of Bladensburg, <i>Rostrevor, Co. Down, Ireland.</i>
1865	Ruck, Geo. T., 47, <i>Camden-road, N.W.</i>
1834	RUSSELL, THE RIGHT HONOURABLE EARL, K.G. (<i>Vice-President</i>), 37, <i>Chesham-place, S.W.</i>
1870	Rutson, Albert, 7, <i>Half Moon-street, Piccadilly, S.W.</i>
1853	*Salomons, Sir David, Bart., M.P., 26, <i>Cumberland-street, W.</i>
1868	Samuelson, Bernhard, M.P. <i>Banbury.</i>
1862	Sargant, William Lucas, <i>Edgbaston, Birmingham.</i>
1850	Saunders, James Ebenezer, jun., 9, <i>Finsbury-circus, E.C.</i>
1869	Sayle, Philip, jun., 89, <i>Cannon-street, E.C.</i>
1865	Scudamore, F. Ives, C.B., <i>General Post Office, E.C.</i>
1866	Senior, George, <i>Rose-hill, Dodworth, near Barnsley.</i>
1869	SEYD, ERNEST, 1A, <i>Princes-street, Mansion House, E.C.</i>
1871	Shadwell, John Lancelot, 21, <i>Nottingham-place, W.</i>
1841	SHAFTESBURY, THE RIGHT HON. THE EARL OF (<i>Vice-President</i>), 24, <i>Grosvenor-square, W.</i>
1869	Shaw, John, <i>South Eastern Railway, London Bridge, E.C.</i>
1871	Sidgwick, Henry, <i>Trinity College, Cambridge.</i>
1857	Simmonds, Peter Lund,
1850	Singer, Charles Douglas, <i>Compton House, Church-street, Stoke Newington, N.</i>
1869	Smee, Alfred Hutcheson, M.R.C.S. 7, <i>Finsbury-circus, E.C.</i>
1871	Smith, E. Cozens, 19, <i>Cornhill, E.C.</i>
1867	*SMITH, WILLIAM HENRY, M.P., 2, <i>Hyde-park-street, W.</i>

Year of Election	
1848	*SOPWITH, THOMAS, M.A., F.R.S., 103, <i>Victoria-street, S.W.</i>
1855	Sowray, John Russell, <i>Office of Woods, 1, Whitehall-place, S.W.</i>
1867	*Spencer, Robert James, <i>High-street, Portsmouth.</i>
1856	Sprague, Thomas Bond, M.A., 18, <i>Lincoln's-inn-fields, W.C.</i>
1872	Spriggs, Joseph, <i>Dale Cottage, Foxton, near Market Harbro'.</i>
1856	*Stainton, Henry Tibbats, <i>Mountsfield, Lewisham, S.E.</i>
1872	STANHOPE, RIGHT HON. THE EARL, D.C.L., <i>Chevening, Kent.</i>
1870	Stark, William Emery, 1, <i>Temple-row West, Birmingham.</i>
1867	Stiebel, Daniel, 2, <i>Westbourne-terrace, W.</i>
1855	Stott, John, 39, <i>St. Vincent-place, Glasgow.</i>
1865	Strachan, Thomas Y., <i>Newcastle-on-Tyne.</i>
1872	Strachey, General Richard, R.E., F.R.S., <i>India Office, S.W.</i>
1864	Sutton, Henry, 7, <i>Regent's-park-road, N.W.</i>
1836	*Symonds, Arthur, 4, <i>South-square, Gray's-inn, W.C.</i>
1859	Tait, Patrick Macnaghten, 38, <i>Belsize Park, N.W.; and Oriental Club</i>
1856	Tartt, William Macdowal, <i>Sandford-place, Cheltenham.</i>
1854	TAYLER, WILLIAM, 28, <i>Park-street, Grosvenor-square, W.</i>
1838	*Taylor, Major-General Pringle,
1834	*Tennent, Robert J., <i>Athenæum Club, S.W.; and Belfast.</i>
1864	*Thompson, Henry Yates, <i>Wyndham Club, St. James's, S.W.</i>
1862	Thomson, Henry, 1, <i>Dale-street, Liverpool.</i>
1868	Thomson, James, 35, <i>Nicholas-lane, E.C.</i>
1871	Thomson, Thomas D., 117, <i>Cannon-street, E.C.</i>
1872	Thurlow, Hon. Thomas John Hovell, <i>Kinnaird, Falkirk.</i>

Year of Election.	
1858	*Tite, Sir William, M.P., C.B., F.R.S. 42, <i>Lowndes-square, S.W.</i>
1855	Tomline, George, M.P., 1, <i>Carlton House-terrace, S.W.</i>
1843	Tottie, John William, <i>Coniston Hall, Bell Bush, Leeds.</i>
1868	*Treatt, Frank Burford, <i>Sydney, New South Wales</i>
1868	Tritton, Joseph Herbert, 54, <i>Lombard-street, E.C.</i>
1852	Tuke, Harrington, M.D., 37, <i>Albemarle-street, W.</i> ; and <i>Manor House, Chiswick, W.</i>
1866	Tully, Thomas, 69, <i>Great Queen-street, Lincoln's-inn-fields, W.C.</i>
1834	*Turnbull, The Rev. T. S., F.R.S., <i>University Club, S.W.</i> ; and <i>Blofield, Norfolk.</i>
1867	Turner, Thomas <i>Kingsdown, Bristol.</i>
1847	Twiss, Sir Travers, D.C.L., F.R.S., 19, <i>Park-lane, W.</i>
1841	Tyndall, William Henry, 92, <i>Cheapside, E.C.</i>
1842	VALPY, RICHARD, <i>Board of Trade, Whitehall-gardens, S.W.</i>
1871	Vanderbyl, Philip, 51, <i>Porchester-terrace, W.</i>
1860	Van de Weyer, His Excellency M. Sylvain, 21, <i>Arlington-street, W.</i>
1868	Venn, Albert John,
1834	Urquhart, David,
1861	Waddell, James, <i>Poultry-buildings, Cheapside, E.C.</i>
1865	*WALEY, PROFESSOR JACOB, M.A., (<i>Honorary Secretary</i>), 20, <i>Wimpole-street, W.</i>
1857	*Walford, Cornelius, <i>Enfield House, Belsize-park-gardens, N.W.</i>
1871	*Walker, Robert Bailey, 24, <i>Cathedral-yard, Manchester.</i>
1854	Walker, Thomas, B.A., <i>Shrewsbury-lane, Plumstead, Kent, S.E.</i>
1868	Wallis, Charles, J., 1, <i>Springfield-road, St. John's Wood.</i>
1850	Walter, John, M.P., 40, <i>Upper Grosvenor-street, W.</i>
1862	Washbourne, Buchanan, M.D., <i>Gloucester.</i>
1865	Watson, William West, <i>Glasgow.</i>

Year of Election.	
1865	Waterhouse, Edwin, B.A., 13, <i>Gresham-street, E.C.</i>
1851	Webb, Charles Locock, 5, <i>New-square, Lincoln's-inn, W.C.</i>
1865	Webster, Alphonsus, 44, <i>Mecklenburg-square, W.C.</i>
1869	Weguelin, Christopher, 17, <i>Lower Belgrave-street, S.W.</i>
1870	Weil, Salomon, 27, <i>Clifton-Gardens, Maida-vale.</i>
1855	Weldon, James Walton, 1, <i>St. James's-square, S.W.</i>
1855	Welton, Thomas Abercrombie, 6, <i>Offerton-road, Clapham, S.</i>
1836	*Whishaw, James, 32, <i>Harewood-square, N.W.</i>
1859	Whitbread, Samuel, M.P., 2, <i>Queen's-gate Gardens, Kensington, W.</i>
1858	White, George Symmons, <i>Fairford, Gloucestershire.</i>
1868	White, James, M.P., 14, <i>Chichester-terrace, Brighton.</i>
1863	White, Leedham, 85, <i>Gracechurch-street, E.C.</i>
1871	White, William, 57, <i>Charing-cross, S.W.</i>
1860	Willans, John W., <i>Baycliffe, near Brighouse.</i>
1872	*Winch, Wm. R., <i>Camden-park, Chislehurst,</i>
1868	Williams, Rowland L. V., <i>Berkeley-gardens, Notting-hill, W.</i>
1864	Williams, Frederick Bessant, 834, <i>Old Kent-road, S.E.</i>
1870	Williams, H. R., 3, <i>Lime-street, E.C.</i>
1868	Wilson, Charles Rivers, <i>Treasury, and 3, Chester-street, Belgrave-square, S.W.</i>
1872	Wilson, Edward, <i>Hayes-place, near Bromley, Kent.</i>
1871	Wilson, J. Edwards, <i>Brunswick House, Bromley, S.E.</i>
1841	*Wilson, John, M.D., F.R.S., 72, <i>Addison-road, Kensington, W.</i>
1842	Wolverton, The Right. Hon. Lord, 1, <i>Upper Eccleston-street, Belgrave-square, S.W.</i>
1868	Wood, H. W. I., <i>Calcutta, Care of Messrs. Richardson, Cornhill, E.C.</i>
1838	Woolhouse, Wesley Stoker Barker, <i>Alwyne-lodge, Alwyne-road, Canonbury, N.</i>

Year of
Election.

1864	*Wyatt-Edgell, Alfred, 40, <i>Lower Grosvenor-street, Grosvenor-square, W.; and Stanford Hall, Rugby.</i>
1838	*Wyatt-Edgell, Rev. Edgell, 40, <i>Lower Grosvenor-street, Grosvenor-square, W.; and Stanford Hall, Rugby.</i>
1872	Yeatman, Morgan, <i>Shawfield, Bromley, Kent.</i>
1849	*Young, Charles Baring, 12, <i>Hyde-park Terrace, W.</i>

* * * *It is particularly requested that any inaccuracy in the foregoing list may be pointed out to the ASSISTANT SECRETARY.*

FOREIGN HONORARY MEMBERS.

Berlin	M. ERNEST ENGEL, <i>Chef du Bureau de Statistique Générale.</i>
Bonn	DR. MENDELSSOHN.
Brussels	M. XAVIER HEUSCHLING, <i>Chef de Division au Ministère de l'Intérieur du Royaume de Belgique, Secrétaire de la Commission Centrale de Statistique.</i>
„	M. V. MISSON.
„	M. ADOLPHE QUETELET, <i>Directeur de l'Observatoire Royal de Bruxelles.</i>
„	M. AUGUSTE VISSCHERS, <i>Conseiller au Conseil des Mines, Membre de la Commission Centrale de Statistique.</i>
Christiania	DR. HOLST.
„	PROFESSOR ASCHEHOUG.
Copenhagen ...	DR. SCHLEISNER.
„ ...	M. DAVID.
Frankfort	M. HEINRICH MEIDINGER.
Geneva	M. MALLET.
„	M. AUGUSTE DE LA RIVE.
Hamburg	DR. JULIUS.
Heidelberg	PROFESSOR FRIEDLANDER.
La Haye	M. M. VON BAUMHAUER, <i>Chef du Bureau de Statistique au Ministère de l'Intérieur.</i>
Madrid	SEÑOR RAMON DE LA SAGRA.
„	COUNT RIPALDA.
Naples	IL GIUDICE ARPINO.
Palermo	SIGNOR FERRARA.
Paris	M. MAURICE BLOCK.

- Paris** M. MICHEL CHEVALIER, *Membre de l'Institut, Professeur au Collège de France, Ancien Député.*
- „ M. JOSEPH GARNIER, *Professeur d'Économie Politique à l'École des Ponts et Chaussées, Rédacteur en chef du Journal des Économistes.*
- „ M. J. E. HORN.
- „ M. MOREAU DE JONNES.
- „ M. WOLOWSKI, *Membre de l'Institut, Rue de Clichy.*
- „ M. ALFRED LEGOYT.
- „ M. DE PARIEU, *Membre de l'Institut Ancien député et ministre, Rue Lycée.*
- „ M. LE PLAY, *Ancien Sénateur.*
- „ M. E. LEVASSEUR, *Professeur au Lycée Bonaparte.*
- „ M. CLEMENT JUGLAR, 167, Rue St. Jacques.
- Portugal** M. A. J. D'AVILA, *Ministre d'Etat honoraire, Conseiller d'État, et Député des Cortès.*
- Rome**..... THE REV. CESARE CONTINI, *Priest of the Diocese and City of Rome, and Member of the Statistical Society of France, 31, Via della Pace, Rome.*
- „ MARCHESE AVV. ERMENEGILDO DE CINQUE QUINTILI, *Segretario Generale della Commissione degli Ospedali di Roma.*
- St. Petersburg** DR. J. B. VERNADSKY, *Councillor of State.*
- Stockholm** DR. FREDERIC THEODOR BERG, *Chief of the Statistical Department, Home Office, Stockholm.*
- „ M. EDWARD SCHEUTZ.
- Turkey** DAOUD PASHA.
- United States**... J. C. G. KENNEDY.
- Norwich, Connecticut, U.S.** HON. DAVID WELLS.
- Boston, U.S.** JOHN E. SANDFORD, *Insurance Commissioner.*
- Vienna** S. E. BARON LE CZOERNIG, *Conseiller intime actuel de S. M. Imp. et Roysl., Président de la Commission Centrale T. et R. de Statistique à Vienne.*

CORRESPONDING MEMBERS.

Adelaide	JOSIAH BOOTHBY, <i>Under Secretary to the Government of South Australia.</i>
Melbourne	WILLIAM HENRY ARCHER, <i>Registrar-General.</i>
Washington ...	ALEXANDER DALLAS BACHE.
Tabriz (Persia)	EDWARD WALTER BONHAM, <i>H.M. Consul.</i>
Calcutta	FREDERICK CORBYN.
Hobart Town ...	THOMAS EWING.
Genoa	SIGNOR FABRIZIO FABIANI, 2, <i>Piazza Colombo.</i>
Florence	SIGNOR GIOVANNI FLECHIA, <i>Librarian and Keeper of the Archives of the Senate of the Kingdom of Sardinia.</i>
Sicily	JOHN GOODWIN, <i>H.M. Consul.</i>
Tasmania	E. SWARBRECK HALL, <i>M.R.C.S.</i>
Berlin	OTTO HUBNER.
Brussels	SIR HENRY PAGE TURNER BARRON, <i>British Legation.</i>
Jena	PROFESSOR BRUNO HILDEBRAND.
Dorchester (Mass.)	DR. EDWARD JARVIS, <i>President of the American Statistical Association, Boston.</i>
Madrid	SEÑOR JOSE MAGAZ JAUME.
St. Petersburg	THOMAS MICHELL, <i>Attaché to H. M.'s Embassy.</i>
Sydney	WILLIAM AUGUSTUS MILES.
Munich	DR. KARL L. SEUFFERT, <i>Chef de Bureau, Department of Trade and Public Works.</i>
Ceylon	THOMAS B. STEPHEN.
„	SEIBY TAYLOR.
Madrid	SEÑOR JUAN B. TR'U' PITA.
The Hague	HON. HOWELL THURLOW, <i>British Embassy.</i>
Athens ..	A. MANSOLAS.
Ottawa	WILLIAM SPRAGGE.

NOTE.—The addresses given in the list of Foreign Honorary and Corresponding Members are generally those at which the Members were residing at the time of their appointment.

REGULATIONS OF THE LIBRARY.

1. THE Library is open daily from Ten till Five, except during the month of September, when it is closed for the annual revision of the Catalogue.

2. Fellows of the Society are permitted to take out Books on making personal application, and signing the lending-book, or by letter addressed to the Librarian; but no Member can have more than two Books at a time, nor keep any work longer than a fortnight; but when a Book is returned by a Fellow, it can be borrowed by him again, provided it has not been bespoken in the interim by another Member.

3. Scientific Journals and Periodicals are not circulated until the volumes are completed and bound.

4. Cyclopædias and works of reference are not circulated.

5. Any Fellow damaging a work, pays a fine equivalent to the injury.

6. Works taken from the shelves for reference, are *not* to be replaced, but must be laid on the Library table.

7. The Secretaries shall report to the Council any infringement of these Regulations.

DONORS TO THE LIBRARY.—YEAR 1871-72

American Academy of Arts and Sciences.	Government of India.	Redgrave, A.
American Geographical and Statistical Society.	„ N. S. Wales.	Register General of England.
American Philosophical Society.	„ New Zealand.	„ Ireland.
Archer, Wm. Henry.	„ S. Australia.	„ Scotland.
Army Medical Department, Whitehall.	„ Tasmania.	Revue „ Bibliographique Universelle (Editor of).
Asiatic Society of Bengal.	„ Victoria.	Royal Agricultural Society.
Athenæum (Editor of).	Guy, Dr.	„ Asiatic „
Axon, W. E. A.	Hammick, James T.	„ Geographical „
Bankers' Magazine (Editor of).	Hancock, Dr.	„ Institution „
Baxter, R. Dudley, M.A.	Harben, H.	„ Medical and Chirurgical Society.
Board of Trade.	Holles, Dr.	„ Society of England.
Boothby, J. (Adelaide).	Hunt, Robert.	„ „ Dublin.
Burns, Rev. Dawson, M.A.	Institute of Actuaries.	„ „ Edinburgh.
Clarke, E. Junior.	Institution of Civil Engineers.	Rivett-Carnac, Harry,
Clinical Society.	Inspectors of Factories.	Ravenstein, E. G.
Cleveland Institution of Engineers.	Institution of Surveyors.	Sargant, W. L.
Craigof, Mr.	Ireland, His Excellency the Lord Lieutenant of	Seyd, Ernest.
Cobden Club.	Insurance Record (Editor of).	Standards Commission, Warden of.
Commissioners of Police.	Iron and Steel Institute.	Smithsonian Institution.
Engel, Dr.	Jarvis, Dr.	Society of Arts.
East India Association.	Lumley, W. G., Q.C.	Statistical Society of Ireland.
Farr, Dr.	Maestri, Dr.	„ Manchester.
Fonblanque, Albany.	Mouat, Dr.	Stark, Wm. E.
Franklin Institute.	Navy, Director-General of the.	United States, Commissioner of.
Gisi, Dr.	Newmarch, William.	Valpy, Richard.
Government of Belgium.	Purdy, Frederick.	Wells, Hon. David.
„ France.	Postmaster-General,	White, William.
„ Holland.	Punjab, Inspector-General of Police of the.	Wolowski, M.
	Quetelet, Mons. A.	Walford, Cornelius.

LAWS OF THE STATISTICAL SOCIETY.

Number of Fellows, Foreign Members, and Corresponding Members.

1. THE number of Fellows shall be unlimited. Foreigners of distinction may be admitted Foreign Members, so that there be not more than fifty Foreign Members at any one time. Persons resident out of the United Kingdom may be admitted Corresponding Members. The number of such Members shall be unlimited.

Proposal of Fellows.

2. Every Candidate for admission as a Fellow of the Society, shall be proposed by two or more Fellows, who, by their certificate that he is a fit person to be admitted a Fellow of the Statistical Society of London, shall certify their personal knowledge of him or of his works. Every such certificate shall be read and suspended in the meeting-room of the Society during an Ordinary Meeting, and shall remain suspended until the following Ordinary Meeting, at which the vote shall be taken upon it.

Election of Fellows.

3. In the election of Fellows, the votes shall be taken by ballot. No person shall be admitted unless at least sixteen Fellows vote, and unless he have in his favour three-fourths of the Fellows voting.

Admission of Fellows.

4. Every Fellow elect shall appear for his admission on or before the third Ordinary Meeting of the Society after his election, or within such time as shall be granted by the Council, otherwise his election shall be void.

The manner of admission shall be thus:—

Immediately after the reading of the minutes, the Fellow elect, having first paid his subscription for the current year or composition, shall sign the

obligation contained in the Fellowship-book, to the effect following:—

“ We, who have underwritten our names, do hereby undertake, each for himself, that we will endeavour to further the good of the Statistical Society of London for improving Statistical Knowledge, and the ends for which the same has been founded; that we will be present at the Meetings of the Society as often as conveniently we can, and that we will keep and fulfil the Rules and Orders of this Society: provided that whensoever any one of us shall make known, by writing under his hand, to the President for the time being, that he desireth to withdraw from the Society, he shall be free thenceforward from this obligation.”

Whereon the President, taking him by the hand, shall say,—“ *By the authority and in the name of the Statistical Society of London, I do admit you a Fellow thereof.*”

Admission of Foreign Members and Corresponding Members.

5. There shall be Two Meetings in the year, on such days as shall be hereafter fixed by the Council, at which *Foreign Members* may be elected. No Foreign Member can be recommended but by the Council. Any Member of the Council may propose a Foreigner of distinction at any Meeting of the Council, delivering at the same time a written statement of the qualifications, offices held by, and published works of the person proposed; and ten days' notice at least shall be given to every Member of the Council, of the day on which the Council will vote by ballot on the question whether they will recommend the person proposed. No such recommendation to the Society shall be adopted unless at least three-fourths of the votes are in favour

thereof. Notice of the recommendation shall be given from the chair at the Meeting of the Society next preceding that at which the vote shall be taken thereon. No such recommendation shall be adopted unless at least three-fourths of those voting are favourable.

The Council shall have power to elect *Corresponding Members*, subject to the conditions prescribed above in regard to the nomination of *Foreign Members*. Fellows of the Society may recommend to the Council persons for election as Corresponding Members.

Payments by Fellows.

6. Every Fellow of the Society shall pay a yearly subscription of *Two Guineas*, or may at any time compound for his future payments by paying at once the sum of Twenty Guineas. No payments are made by Foreign Members, or by Corresponding Members.

Defaulters.—Withdrawal of Fellows.

7. All yearly payments are due in advance on the 1st of January, and if any Fellow of the Society have not paid his subscription before the 1st of July, he shall be applied to in writing by the Secretaries, and if the same be not paid before the 1st of January of the second year, a written application shall again be made by the Secretaries, and the Fellow in arrear shall cease to receive the Society's publications, and shall not be entitled to any of the privileges of the Society until such arrears are paid; and if the subscription be not discharged before the 1st of February of the second year, the name of the Fellow thus in arrear shall be exhibited as a defaulter on a card suspended in the meeting-rooms; and if, at the next Anniversary Meeting, the amount still remain unpaid, the defaulter shall be announced to be no longer a Fellow of the Society, the reason for the same being at the same time assigned. No Fellow of the Society can withdraw his name from the Society's books, unless all arrears be paid; and no resignation will be deemed valid unless a written notice thereof be communicated to the Secretaries. No Member shall be entitled to vote at any Meeting of the Society

until he shall have paid his subscription for the current year.

Expulsion of Fellows.

8. If any Fellow of the Society, or Foreign Member, or Corresponding Member, shall so demean himself that it shall be for the dishonour of the Society that he longer continue to be a Fellow or Member thereof, the Council shall take the matter into consideration; and if a majority of the whole Council at some Meeting (of which and of the matter in hand such Fellow or Foreign Member, and every Member of the Council, shall have due notice) shall decide by ballot to recommend that such Fellow or Member be expelled from the Society, the President shall at the next Ordinary Meeting announce to the Society the recommendation of the Council, and at the following Meeting the question shall be decided by ballot and if at least three-fourths of the number voting are in favour of the expulsion, the President shall forthwith cancel the name in the Fellowship-book, and shall say,—

“By the authority and in the name
“of the Statistical Society, of London,
“I do declare that A. B. (naming him)
“is no longer a Fellow (or Member)
“thereof.”

And such Fellow or Foreign Member, or Corresponding Member, shall thereupon cease to be of the Society.

Trustees.

9. The property of the Society shall be vested in *three Trustees*, chosen by the Fellows. The Trustees are eligible to any other offices in the Society.

President, Council, and Officers.

10. The Vice-Presidents shall be the past Presidents, and four other Members of the Society to be named by the President. Any five of the Council may act. From the Council shall be chosen a *President, Vice-Presidents, a Treasurer, and three Secretaries*. Six Fellows, at least, who were not of the Council of the previous year, shall be annually elected.

Committees.

11. The Council shall have power to appoint *Committees of Fellows* for the

examination of particular questions, and to report thereon to the Council. No such report shall be communicated to the Society which is not approved by the Council.

Election of President and Officers.

12. The *President* shall be chosen yearly by the Fellows; the same person shall not be eligible more than two years in succession. The *Vice-Presidents* shall be the past Presidents and four other Members of the Society to be named by the President. The *Treasurer* and *Secretaries* shall be chosen yearly by the Fellows, but may be continually re-elected.

Election of Council.

13. The Council shall, previously to the Anniversary Meeting, nominate, by ballot, the *Fellows whom they recommend* to be the next President and Council of the Society. They shall also recommend a Treasurer and Secretaries. Notice shall be sent to every Fellow whose residence is known, within the limits of the metropolitan post, at least a fortnight before the Anniversary Meeting, of the names on the list which the Council will recommend.

Extraordinary Vacancies.

14. On any *extraordinary vacancy* of the Office of the President, or other Officer of the Society, or in the Council, one of the Secretaries shall summon the Council with as little delay as possible, and a majority of the Council, thereupon meeting in their usual place, shall, by ballot, and by a majority of those present, choose a new President, or other Officer of the Society, or Member of the Council, to be so until the next Anniversary Meeting.

Meetings Ordinary and Anniversary.

15. The *Ordinary Meetings* of the Society shall be monthly during the Session, which shall be from the 1st of November to the 1st of July, both inclusive, on such day and at such hour as the Council shall declare at the previous Anniversary Meeting. The *Anniversary Meeting* shall be held on such a day in June of each year as shall annually be appointed by the Council for the time being.

Business of Ordinary Meetings.

16. The business of the *Ordinary Meetings* shall be to admit Fellows, to read and hear reports, letters, and papers on subjects interesting to the Society. Nothing relating to the rules or management of the Society shall be discussed at the Ordinary Meetings, except that the *Auditors' Report* shall be received at the Ordinary Meeting in *February*, and that the Minutes of the Anniversary Meeting, and of every Special General Meeting, shall be confirmed at the next Ordinary Meeting after the day of such Anniversary or Special General Meeting. *Strangers* may be introduced to the Ordinary Meetings, by any Fellow, with the leave of the President, Vice-President, or other Fellow presiding at the Meeting.

Business of Anniversary Meeting.

17. The business of the *Anniversary Meeting* shall be to elect the Officers of the Society, and to discuss questions on its rules and management. No Fellows or Foreign Members shall be proposed or admitted at the Anniversary Meeting. No Fellow shall moot any question on the rules or management of the Society at the Anniversary Meeting, unless after *three weeks' notice* thereof given to the Council, but amendments to any motion may be brought forward without notice, so that they relate to the same subject of motion. The Council shall give fourteen days' notice to every Fellow of all questions of which such notice shall have been given to them.

Special General Meetings.

18. The Council may, at any time, call a *Special General Meeting* of the Society when it appears to them necessary. Any ten Fellows may require a Special General Meeting to be called, by notice in writing signed by them, delivered to one of the Secretaries at an Ordinary Meeting, specifying the questions to be moved. The Council shall, within one week of such notice, appoint a day for such Special General Meeting, and shall give one week's notice of every Special General Meeting, and of the questions to be moved, to every Fellow within the limits of the metropolitan

post, whose residence is known. No business shall be brought forward at any Special General Meeting other than that specified in the notice for the same.

Auditors.

19. At the *first Ordinary Meeting* of each year, the Fellows shall choose two *Auditors*, not of the Council, who, with one of the Council, chosen by the Council, shall audit the Treasurer's accounts, and report thereon to the Society, which report shall be presented at the Ordinary Meeting in February. The Auditors shall be empowered to examine into the particulars of all expenditure of the funds of the Society where they shall see occasion, and may report their opinion upon any part of it.

Duties of the President.

20. The *President* shall preside at all Meetings of the Society, Council, and Committees, which he shall attend, and in case of an equality of votes, shall have a second or casting vote. He shall sign all diplomas of admission of Foreign Members. He shall admit and expel Fellows or Members, according to the rules of the Society.

Duties of the Treasurer.

21. The *Treasurer* shall receive all moneys due to, and pay all moneys due from, the Society, and shall keep an account of his receipts and payments. No sum exceeding Ten Pounds shall be paid but by order of the Council, excepting always any lawful demand for rates or taxes. He shall invest the moneys of the Society in such manner as the Council shall from time to time direct.

Duties of the Secretaries.

22. The *Secretaries* shall, under the control of the Council, conduct the correspondence of the Society; they or one of them shall attend all Meetings of the Society and Council, and shall have the care of duly recording the Minutes of the Proceedings. They shall issue

the requisite notices, and read such papers to the Society as the Council may direct.

Powers of the Vice-Presidents.

23. A *Vice-President* in the chair shall act with the power of the President, in presiding and voting at any Meeting of the Society or Council, and in admitting Fellows; but no Vice-President shall be empowered to sign diplomas of admission of Foreign Members, or to expel Fellows. In the absence of the President and Vice-Presidents, any Fellow of the Society may be called upon, by the Fellows then present, to preside at an Ordinary Meeting. The Fellow so presiding may admit Fellows, but shall not be empowered to act otherwise as President, or Vice-President.

Powers of the Council.

24. All *Communications* to the Society, are the property of the Society, unless the right of property be especially reserved to themselves by the contributors of communications. The Council shall have control over the papers and funds of the Society, and may, as they shall see fit, direct the publication of papers and the expenditure of the funds, so, nevertheless, that they shall not at any time contract engagements on the part of the Society beyond the amount of the balance that would be at that time in the Treasurer's hands, if all pre-existing debts and liabilities had been satisfied.

25. The Council shall be empowered at any time to frame *Regulations* not inconsistent with these rules, which shall be, and remain in force until the next Anniversary Meeting at which they shall be either affirmed or annulled; but no Council shall have power to renew Regulations which have once been disapproved at an Anniversary Meeting.

26. No Dividend, Gift, Division, or Bonus in money shall be made by the Society, unto or between any of the Members.



